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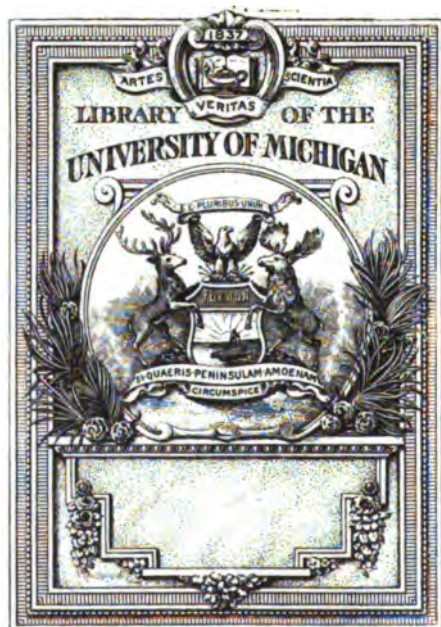
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## OF THE ROYAL STATISTICAL SOCIETY.

MARCH, 1904.

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*On the SMALLER URBAN DISTRICTS of ENGLAND and WALES.*

*By* THOMAS A. WELTON, F.C.A.

[Read before the Royal Statistical Society, 19th January, 1904.

MAJOR PATRICK GEORGE CRAIGIE, C.B., President, in the Chair.]

IN my paper, read before the Manchester Statistical Society on 13th April, 1898, on the "1891 Census of Occupations of Males in "our large Towns," I remarked upon the fact that "the great county "of Lancaster contained 203,844 men working in cotton. Of these "88,814 are returned as inhabitants of the largest towns, but how "the remaining 115,030 are distributed is left to conjecture." I pointed to other cases where in like manner information of an interesting nature had not been furnished.

In arranging the census of 1901 a great deal has been done to remedy these deficiencies. We are for the first time introduced to the inner life of the urban areas with populations ranging from 5,000 up to 50,000 persons. I propose now to do a necessary work by assorting the 590 places whose "occupations" statistics are at last disclosed, according to their industrial or other characters, and it will be found that, with very striking diversities of character (as, for instance, between the rudest colliery village and the most luxurious seaside resort), something like regularity can be discerned in their social features.

I must here explain that I find it advisable, with a view to clearness, to separate the population of every place, whether urban or rural, into two main elements, which I have designated the "primary" and the "secondary" classes. The first includes industries such as agriculture, fishing, mining, manufactures on a large scale, commerce, and the national defence. Those so employed are met with where circumstances may invite or dictate, and the several occupations accordingly assume very dissimilar proportions in different places. The secondary workers include

those who are engaged in the supply of local wants and the performance of personal services. The total number of such persons, as compared with that of workers generally, varies very much, but the constituent parts of such total are similar, and usually vary together, so as to present a much closer approach to uniformity than in the case of primary industries. The primary occupations should indeed determine the character of a place, whilst the secondary occupations should indicate the simplicity or the luxury of its social conditions. These ideas require some modifications, which will suggest themselves to those who carefully consider the appended tables, but on the whole I think they are well founded.

In carrying out this investigation much use has to be made of the notes to the summary tables in the Census volumes, and it becomes in some instances necessary to have recourse to estimates in order to complete the minor details and present a consistent picture of the whole. The tables as to residents in military and naval barracks, ships of war, &c., have also to be referred to.

In the result, I arrive at the conclusion that the 590 include—

300 distinctly industrial towns ;

75 towns in which there are industries, but generally an admixture of trading, so that no single industry occupies a commanding position. I call these "mixed."

Then there are—

69 ordinary trading towns ;

39 seaside and residential places ;

and 107 suburban or dependent municipalities, whereof 43 have a more or less strong infusion of industrial occupations.

The primary industries, according to my classification, are shown in Table I (a), which refers to the smaller urban districts in 38 counties,<sup>1</sup> in relation to which summarised tables of occupations have been provided. It will be seen that out of 3,027,525 males returned under some occupation—

1,576,027 were engaged in primary industries ;

leaving 1,316,042 who were engaged in secondary industries ;

and 135,456 employed, but returned in such an indefinite manner that they cannot be classified.

Of these 3,027,525 male workers, 2,681,581 were inhabitants of one or other of the 590 urban districts to which our attention is to be directed, and 345,944 lived in less populous urban districts not mentioned in the summaries.

<sup>1</sup> These include all the English counties except Hereford, Huntingdon, Rutland, and Westmorland ; also Glamorgan and Carnarvon in Wales, London being also of course excluded.



The average proportion of primary workers was 52·1 per cent., against 44·5 per cent. in the larger towns, and 61·3 per cent. in the rural districts.

It is quite natural that these towns should occupy an intermediate position, as many of the smaller urban districts possess hardly a trace of the trading classes which abound in large cities, but, being absorbed in some industrial pursuit, show high ratios of primary workers.<sup>2</sup>

By a process which gives a very fair approximation to the truth, I have apportioned the unspecified primary workers (those, I mean, which are not specified in the county summaries) amongst the towns of each county, with the following result :—

59 towns show ratios not less than 75 per cent. of primary workers.

70        "        from 69 to 75 per cent.

84        "        "    62    "    69        "

60        "        "    55    "    62        "

76        "        "    45    "    55        "

75        "        "    38    "    45        "

74        "        "    31    "    38        "

41        "        "    26    "    31        "

51        "        under 26        "

The industrial places include the whole of those showing ratios of primary workers not lower than 55 per cent., and a good number with lower ratios, thus :—

	Industrial Places.		Trading Towns.	Residential Places.	Suburbs and Dependencies.		
	Pure.	Mixed.			Industrial.	Others, Provincial.	Others, Metropolitan.
Ratios 55 per cent. and upwards .....	250	3	—	—	20	—	—
" 45 to 55 .....	38	18	—	—	14	5	1
" 38 " 45 .....	9	36	9	—	5	8	8
" 31 " 38 .....	3	16	84	1	4	—	16
" 26 " 31 .....	—	2	10	11	—	5	13
" under 26 per cent....	—	—	16	27	—	2	6
Totals .....	300	75	69	39	43	20	44

The highest ratios of primary workers are met with in mining districts ; but perhaps at this point I shall do well to introduce to my readers the actual towns of which I am speaking, and first, the

<sup>2</sup> In Table I (b) will be found some information as to the composition of the secondary classes, and the average proportions for small and large towns ; also a couple of extreme cases of low and high development of these classes.

105 COLLIERY TOWNS. In these, taking one with another, coal mining occupied 51·1 per cent. of the male working inhabitants, the next primary industry being engineering, machine and tool making, which employed only 5·4 per cent.

County and Urban District.	Per Cent.			County and Urban District.	Per Cent.		
	Col- liers.	Total Pri- mary.	Total Secou- dary.		Col- liers.	Total Pri- mary.	Total Secou- dary.
<b>Lancaster—</b>				<b>Durham—Contd.</b>			
Abram.....	73·4	84·0	13·9	Tanfield .....	65·8	77·7	19·7
Ashton . in . }	69·1	81·9	15·6	Willington .....	56·3	77·7	20·0
Makerfield .....				Blaydon .....	41·5	71·9	25·6
Aspull.....	58·8	79·0	18·7	Crook .....	54·6	74·0	24·3
Haydock.....	70·5	83·4	14·8	Ryton .....	60·1	74·8	22·4
Hindley.....	65·7	78·1	20·3	Shildon and }			
Ince-in-Maker- }	50·7	76·9	20·9	East Thickley }	39·3	71·3	27·2
field.....				Spennymoor .....	37·9	72·3	24·9
Standish.....	64·1	77·0	20·6	Whickham .....	31·7	69·7	27·6
Westhoughton .....	58·9	77·4	20·2	Felling .....	38·2	66·0	32·3
Skelmersdale .....	65·0	76·5	21·0	Houghton - le - }			
Golborne.....	47·1	73·1	24·5	Spring.....	58·1	68·9	28·6
Little Hulton.....	56·3	72·8	25·0	Seaham Harbour }	24·0	56·0	41·0
Little Lever .....	41·4	74·6	23·1	<b>Northumberland—</b>			
Orrell.....	52·8	69·0	28·0	Ashington .....	80·5	86·0	12·9
Pemberton.....	58·3	70·8	27·2	Bedlingtonshire.....	66·6	80·7	17·8
Swinton and }	36·2	64·5	32·6	Cramlington .....	69·3	79·3	19·3
Pendlebury }				Earsdon .....	74·4	85·5	13·4
Worsley.....	34·4	62·0	34·6	Newburn .....	44·6	79·4	18·4
<b>York, West Riding—</b>				Weetslade .....	77·0	85·6	13·1
Ardley, East }	38·1	77·9	19·8	Blyth .....	23·6	64·7	32·6
and West .....				Cowpen .....	44·7	66·1	32·3
Darton.....	65·1	82·0	15·8	<b>Stafford—</b>			
Featherstone .....	72·7	82·7	15·9	Audley .....	66·1	81·4	15·1
Handsworth .....	55·0	76·5	21·2	Biddulph .....	38·4	75·4	20·5
Hoyland Nether...	66·7	80·7	17·7	Brownhills .....	66·1	79·7	18·1
Normanton .....	53·7	75·7	22·7	Smallthorne .....	37·9	80·4	17·4
Rawmarsh.....	55·7	77·1	21·2	Cannock .....	54·2	71·7	25·6
Swinton.....	50·8	75·0	23·3	Sedgley .....	24·8	54·5	41·2
Wombwell.....	68·7	79·2	19·5	<b>Derby—</b>			
Worsborough.....	65·0	82·2	16·1	Bolsover .....	64·7	76·5	21·8
Ardley.....	36·3	71·4	26·6	Alfreton .....	44·8	70·1	27·4
Rothwell.....	44·1	72·1	25·9	Clay Cross .....	55·6	74·9	22·2
Stanley.....	58·7	73·8	24·2	Heanor .....	49·9	73·6	24·6
Thornhill.....	20·4	69·5	27·9	Ilkeston .....	48·0	69·3	27·4
Wath - upon - }	57·4	70·3	28·0	Swadlincote .....	41·2	74·6	23·0
Deerne .....				Whittington .....	30·0	73·0	23·4
Castleford.....	42·8	68·1	30·3	Newbold Dunston .....	32·7	68·6	27·5
Mexborough .....	33·6	67·7	30·3	Ripley.....	38·3	63·5	33·2
Pontefract.....	33·6	62·0	35·3	Chesterfield .....	22·0	48·7	46·7
Stocksbridge .....	19·5	68·9	27·2	<b>Nottingham—</b>			
Barnsley.....	26·2	53·1	44·7	Kirkby-in-Ash- }	65·8	77·5	20·9
<b>Durham—</b>				field .....			
Annfield Plain .....	69·8	77·1	21·0	Hucknall Torkard }	63·3	73·8	24·6
Brandon and }	68·2	84·0	14·5	Sutton - in - Ash- }	49·1	69·9	27·9
Byshottles .....				field .....			
Hetton.....	68·6	78·2	19·9	Mansfield .....	20·0	50·4	46·0
Stanley.....	73·3	81·8	16·2	Worksop.....	22·4	44·6	51·2

County and Urban District.	Per Cent.			County and Urban District.	Per Cent.		
	Col- liers.	Total Pri- mary.	Total Sec- ondary.		Col- liers.	Total Pri- mary.	Total Sec- ondary.
Salop—				Glamorgan— <i>Contd.</i>			
Dawley .....	24·4	68·8	26·2	Pontypridd .....	51·7	69·0	27·6
Oakengates .....	22·4	66·6	29·9	Caerphilly .....	45·2	68·5	33·2
Warwick—				Margam .....	20·8	62·7	33·1
Nuneaton .....	28·4	61·8	35·1	Monmouth—			
Leicester—				Abertillery .....	73·1	78·6	20·0
Coalville .....	39·1	69·6	28·5	Abersychan .....	65·2	78·7	19·7
Cumberland—				Ebbw Vale .....	47·9	77·4	20·7
Whitehaven .....	31·1	57·4	37·6	Tredegarn .....	57·9	76·3	21·5
Somerset—				Nantyglo and } .....	72·6	82·9	15·5
Midsomer Norton	41·6	64·9	32·3	Blaina .....			
Glamorgan—				Abercarn .....	66·5	79·2	19·1
Glencorrrwg .....	71·6	79·5	18·4	Bedwelty .....	64·2	76·4	21·7
Maesteg .....	71·4	78·5	19·5	Rhymney .....	68·4	76·4	22·0
Mountain Ash .....	72·2	80·4	17·6	Risca .....	49·0	75·8	21·6
Ogmore and Garw	75·9	83·6	14·6	Blaenavon .....	41·4	73·6	24·1
Aberdare .....	63·9	74·6	22·9	Pontypool .....	27·7	52·6	43·8

The idea seems to exist in some quarters that because many of our census returns of occupations are filled up by uneducated people, very little reliance can be placed on them. This class of towns being so numerous, there is an unusually good opportunity of studying the proportions of secondary workers, as returned, and I have accordingly made the following calculations as to the four principal subdivisions of those workers, viz. :—

	Percentage of Primary Workers.	Average Ratios per Cent.*			
		Building.	Con- veyance.	Food.	Dress.
16 urban districts ....	80·7 to 86·0	3·8	2·8	3·3	1·1
15 " .....	77·9 " 80·4	4·6	3·9	3·7	1·3
16 " .....	75·8 " 77·7	5·0	4·5	4·1	1·2
16 " .....	72·8 " 75·7	5·3	5·0	4·7	1·6
16 " .....	69·0 " 72·3	6·8	5·8	4·7	1·8
16 " .....	62·0 " 68·9	7·7	7·2	5·4	1·9
10 " .....	44·6 " 62·0	10·4	8·3	7·5	3·1
Averages .....	—	6·2	5·3	4·7	1·7
Average of 69 } trading towns .... }	—	15·5	11·2	10·3	4·8

\* These classes are reduced by certain transfers which had to be made to the primary classes, for which see Table I.

The last ten places contain a perceptible trading element, but the ratios I submit show a very uniform gradation from the most narrow provision for home comforts upwards, the highest ratios

being far below the standard of ordinary trading towns, as above shown; and in this way I think the figures give some evidence of being based on true materials.

Table II shows the range of these ratios in various classes of towns. Its preparation has been a heavy piece of work, but it will, I think, repay careful study. It assures me that there is considerable regularity in the distribution of the principal secondary classes, and it will serve to put us on inquiry wherever we find a noticeable deviation from what is usual.

It will be seen that the ratios of colliers are hardly in any case below 20 per cent. of the working male population in the 105 places now being considered, but it might be well to set down here the other industries, which in particular places form a considerable supplement to that of coal mining. Some of them are naturally associated with the presence of fuel supplies, such as the iron manufacture, and those of bricks, glass, and earthenware.<sup>3</sup>

	Per Cent. Employed.						
	Coke Burner.	Iron Manu- factures.	Steel Smelter.	Engi- neering, Tools.	Bricks.	Glass.	Earthen- ware.
Oakengates..... Salop	—	17·1	—	18·2	—	—	—
Blaenavon..... Monmouth	—	16·7	—	7·9	—	—	—
Ebbw Vale .... "	—	15·8	—	6·6	—	—	—
Margam..... Glamorgan	—	13·4	—	7·6	—	—	—
Biddulph..... Stafford	—	12·7	—	11·8	—	—	—
Smallthorne .... "	—	12·6	—	12·6	11·9*	—	—
Stocksbridge.... W. Riding	—	10·9	—	—	9·2	—	—
Brandon and Byshottles } Durham }	8·0	—	—	—	—	—	—
Crook..... Durham	8·4	—	—	—	—	—	—
Willington ..... "	8·1	—	—	—	—	—	—
Newburn, Northumberland	—	—	14·0	7·4	—	—	—
Swadlincote..... Derby	—	—	—	—	—	—	20·8
Castleford..... W. Riding	—	—	—	—	—	15·2	—
Ardley..... "	—	—	—	—	—	20·1	—
Thornhill..... "	—	—	—	—	—	16·2	—
Spennymoor..... Durham	—	8·5	—	15·0	—	—	—
Dawley..... Salop	—	8·7	—	14·7	6·3	—	—
Risca..... Monmouth	—	8·7	—	7·3	—	—	—
Pontypool .... "	—	7·4	—	7·6	—	—	—
Nuneaton..... Warwick	—	—	—	—	8·7	—	—
Aspull..... Lancaster	—	7·0	—	—	—	—	—
Ince-in-Makerfield .. "	—	5·8	—	5·5	—	—	—
Rawmarsh..... W. Riding	—	5·3	—	6·2	—	—	—
Barnsley ..... "	—	—	—	6·6	—	8·6	—

\* Bricks, glass, earthenware not distinguished.

<sup>3</sup> The absence of ratios in the columns below shows either that the numbers are low, or sometimes that the tables give no information. Digitized by Google

In other mining districts the railway service reached unusual dimensions, the excess being shown below :—

	Per Cent. Employed.			Per Cent. Employed.		
	Railway Service.	Engineering, Tools.		Railway Service.	Glass Manufactures.	Engineering, Tools.
Ardsley, East and West W. Riding }	15·9	—	Ince-in-Makerfield Lancs. }	7·7	—	—
Shildon and East Thickley..... Durham }	13·4	—	Swinton W. Riding	6·0	4·9	—
Whittington.....Derby	8·3	18·0	Rothwell „	5·4	—	5·7
Normanton ....W. Riding	11·7	—	Mexborough „	5·6	13·6	—

The other cases of special industries secondary to coal mining are shown below. First, textile manufactures were noticed in these eleven places :—

	Per Cent. Employed.					Per Cent. Employed.	
	Textile Manufactures.	Engineering, Tools.	Glass Manufactures.			Textile Manufactures.	Engineering, Tools.
Little Lever.....Lancs.	13·1	—	—	Golborne..... Lancs.		8·6	—
Sutton-in-Ashfield } Notts	12·1	—	—	Westhoughton „		8·3	—
Swinton and Pendlebury..... Lancs. }	10·4	5·0	—	Heanor..... Derby		7·7	6·3
Thornhill.... W. Riding	10·2	—	16·2	Little Hulton... Lancs.		7·3	—
Woraley..... Lancs.	9·8	—	—	Ilkeston..... Derby		5·9	11·7
				Mansfield..... Notts.		4·4	9·2

Next, places where engineering work and brick making alone rose to any importance were twelve in number :—

	Per Cent. Employed.				Per Cent. Employed.
	Engineering and Tools.	Bricks.			Engineering and Tools.
Whickham.....Durham	16·7	—	Alfreton..... Derby		11·0
Sedgley..... Stafford	14·5	—	Clay Cross..... „		10·6
Newbold and Dunston } Derby	13·8	7·6*	Coalville.....: Leicester		10·2
Blaydon..... Durham	13·1	5·7*	Cannock.....Stafford		8·6
Bipley..... Derby	12·0	—	Tredegarr..... Monmouth		6·3
Chesterfield..... „	11·2	—	Pontypridd... Glamorgan		5·2

\* Brick, glass, and earthenware not distinguished.

There remain a few with special features, such as partially account for the ratio of coal miners not being higher, viz. :—

		Per Cent. Employed.					
		Seamen, Dock, Har- bour.	Ship- build- ing.	Engi- neering, Tools.	Glass Manu- factures.	Military.	Boot Manu- factures.
Whitehaven.....	Cumberland	4·8	—	5·6	—	—	—
Seaham Harbour.....	Durham	6·0	—	6·6	11·5	—	—
Cowpen.....	Northumberland	—	8·1	5·4	—	—	—
Felling.....	Durham	—	6·6	8·9	—	—	—
Blyth.....	Northumberland	20·5	—	—	—	—	—
Pontefract.....	W. Riding	—	—	—	—	9·7	—
Midsomer Norton.....	Somerset	—	—	—	—	—	8·5

In some districts there was a noticeable agricultural element, which in Worksop rose to 8·3 per cent.

I have dwelt upon these 105 places, as it appears few of them have reached public knowledge in the same manner as so many trading places of equal or smaller magnitude have done. I shall proceed more rapidly with the rest :—

*Coal Mining and Textile Manufacturing Places.*

		Per Cent. Employed.			
		Coal Mining.	Textile Manufactures.	Total Primary.	Total Secondary.
Tyldesley.....	Lancashire	54·5	12·4	76·7	21·3
Atherton.....	"	40·5	17·4	74·0	24·0
Oswaldtwistle.....	"	12·7	38·3	72·3	25·0
Clayton-le-Moors	"	19·7	29·0	71·1	26·4
Leigh .....	"	40·5	13·0	68·1	29·7
Kearsley .....	"	37·8	15·1	68·0	23·8
Liversedge .....	W. Riding	18·9	22·7	67·8	30·4
Ossett .....	"	24·5	22·9	65·1	32·3
Soothill Upper ....	"	24·4	21·8	63·5	34·2
Farnworth .....	Lancashire	21·0	24·7	61·0	36·3
Birstal .....	W. Riding	17·6	19·6	60·9	36·1

In these eleven places the only other industry of importance is engineering, which accounted for 13·4 per cent. of male workers in Liversedge (including the wiredrawers), 9·7 in Atherton (including bolt and nut makers), 8·5 in Leigh, 7·2 in Oswaldtwistle, 7·0 in Birstal, and 6·9 in Farnworth.

The Lancashire townships were mainly engaged in the cotton manufacture, those in Yorkshire in the manufacture of woollens.

*Iron, Tin, Slate-Mining and Quarrying.*

		Per Cent. Employed.							
		Engi- neer- ing and Tools.	Stone Quar- rying.	Iron Manu- fac- tures.	Iron Min- ing.	Tin Min- ing.	Slate Quar- rying.	Total Pri- mary.	Total Secon- dary.
Arlecdon.....	Cumberland	2·8	12·2	—	43·8	—	—	79·6	17·7
Skelton and Brotton N. Riding		3·5	—	—	62·0	—	—	74·4	22·2
Cleator Moor....	Cumberland	5·0	—	8·1	41·8	—	—	72·1	24·6
Dalton-in-Furness.....	Lancs.	5·7	—	4·9	39·2	—	—	68·8	26·4
Egremont.....	Cumberland	4·8	—	—	43·8	—	—	68·4	28·3
Loftus.....	N. Riding	3·6	—	8·2	44·4	—	—	67·1	28·9
Guisborough .....	"	3·9	—	—	40·9	—	—	58·2	37·4
Millom .....	Cumberland	4·5	3·9	6·5	33·8	—	—	58·2	37·2
St. Just.....	Cornwall	4·4	—	—	—	52·8	—	75·9	22·1
Camborne .....	"	10·9	—	—	—	40·4	—	64·1	32·8
Redruth .....	"	6·9	—	—	—	18·9	—	43·9	51·3
Bethesda.....	Carnarvon	2·6	—	—	—	—	61·5	70·4	27·4

The Cornish districts contained a good number of agriculturists, but otherwise the above table shows the main industries in these twelve places.

*Pottery, Brick, Cement, Glass, &c., Workers.*

These eleven towns were all occupied with earthy products, including salt:—

		Per Cent. Employed.							
		Earth- en- ware.	Brick.	Ce- ment.	Glass.	Coal Min- ing.	Salt Maker.	Total Pri- mary.	Total Secon- dary.
Fenton.....	Stafford	25·6	—	—	—	23·3	—	67·4	30·0
Tunstall.....	"	32·6	—	—	—	14·5	—	67·3	29·4
Longton.....	"	43·6	—	—	—	16·2	—	66·0	31·6
Burslem.....	"	43·4	—	—	—	8·8	—	65·2	32·0
Stoke-upon-Trent....	"	24·3	—	—	—	5·2	—	58·1	37·9
Wenlock.....	Salop	12·7	8·4	—	—	7·6	—	63·7	31·7
Sittingbourne .....	Kent	—	28·8	—	—	—	—	54·5	41·0
Milton next Sittingbourne }	Kent }	—	19·3	—	—	—	—	54·0	40·5
Northfleet.....	Kent	—	—	27·3	—	—	—	52·8	42·1
Knottingley.....	W. Riding	—	—	—	30·5	—	—	61·5	35·8
Winsford.....	Cheshire	—	—	—	—	—	28·6	52·1	43·3

These places contained considerable numbers in the engineering class, as 12·5 per cent. in Wenlock, 8·5 in Fenton and in Stoke, and 7·5 in Winsford; agriculture employed 10·7 per cent. in Wenlock, 7·3 in Winsford.



*Agriculture, Fishing, Horse Training.*

A considerable number of the ordinary trading towns and of suburban places showed greater numbers of agriculturists (including gardeners, not being domestic servants) than of any other class of primary workers. The towns here shown had more than 20 per cent. of agriculturists, and have therefore been classed with industrial places:—

	Area. Acres.	Agriculturists per 100 Acres.	Per Cent. Employed.						
			Agricultural.	Fishing.	Grooms, &c.	Railway Service.	Ship- building.	Total Primary.	Total Secondary.
*North Bromsgrove } Worcestershire	10,588	5.2	32.0	—	—	—	—	62.1	32.8
March..... Cambs.	19,777	4.0	32.4	—	—	20.1	—	59.1	37.6
*Latham and Burscough, Lancashire	13,660	—	—	—	—	—	—	57.5	34.1
Cheshunt..... Herts	8,479	11.8	25.1	—	—	—	—	54.7	40.2
Spalding.....	10,752	6.5	25.1	—	—	5.7	—	48.7	46.3
Biggleswade..... } Bedfordshire	4,647	12.1	36.9	—	—	—	—	48.1	47.8
Ely, Cambridgeshire	16,732	4.4	30.9	—	—	7.6	—	44.9	50.8
Evesham..... } Worcestershire	2,265	32.4	33.2	—	—	—	—	44.6	51.0
Saffron Walden.....	7,502	4.8	21.9	—	—	—	—	37.7	55.9
Paul..... Cornwall	—	—	12.5	54.0	—	—	—	75.5	23.1
Brixham..... Devon	—	—	7.2	32.5	—	—	6.9	52.7	43.8
St. Ives..... Cornwall	—	—	6.6	37.2	—	—	—	51.9	44.8
Lowestoft†.....	—	—	1.5	15.1	—	—	4.1	36.3	59.9
Newmarket.....	—	—	6.0	—	28.5	—	—	48.4	47.1

\* North Bromsgrove and Latham (with Burscough) appear to be little more than rural tracts of country, and almost as much may be said of other places with large acreage, such as March. It is not suggested that in these days of cheap bicycles, agriculturists resident in small towns confine their labours to the areas of such towns.

This note, added since the reading of the paper, explains some of the points raised in the discussion.—ED.

† Lowestoft is in a considerable measure a watering place.

Engineering employed 10.3 per cent. in Cheshunt, and 16.8 in North Bromsgrove. Gunpowder works employed 6.7 per cent. of the men of Cheshunt. Sailors and bargemen were returned in Lowestoft and Latham, also shipbuilders in Lowestoft and Brixham, but not in large numbers.

The usual density of agricultural men in the smaller urban districts was under 5 per 100 acres.<sup>4</sup> The figure for Evesham was remarkably high, due to the market gardening industry. As respects Lathom, for which a figure is not given, if we assume 4 per 100 acres, or .546 agriculturists, this equals nearly 22 per cent. of population (working males).

*Iron Manufacturing.*

	Per Cent. Employed.						
	Iron Manu- fac- tures.	Iron Min- ing.	Coal Min- ing.	Sailors, &c.	Rail- way Ser- vice.	Total Pri- mary.	Total Secun- dary.
Eston..... N. Riding	38.1	12.7	—	—	—	70.8	25.1
Workington..... Cumberland	27.8	—	4.1	3.5	3.4	67.6	28.4
Consett..... Durham	39.4	—	8.3	—	—	65.2	31.6
Briton Ferry..... Glamorgan	40.5	—	—	—	—	64.9	30.4
South Bank in Normanby N. Riding	25.7	—	—	—	4.6	64.5	29.0
Benfieldside..... Durham	28.0	—	14.3	—	—	63.5	33.1
Scunthorpe..... Lincoln	31.7	9.8	—	—	—	61.3	35.4
Aberavon..... Glamorgan	19.2	—	7.2	6.3	—	51.1	43.1

Engineering employed 18.3 per cent. in Workington, 11.7 in South Bank, 9.0 in Briton Ferry, 8.9 in Scunthorpe, and 8.1 in Eston.

Iron manufactures exist, of course, in many other of the smaller urban districts, but are not elsewhere the chief industry.

<sup>4</sup> The totals for those urban districts (in thirty-eight counties), including districts for which separate information was not furnished, were: 140,582 agriculturists, including gardeners (not servants), upon 2,992,324 acres, or 4.7 per 100 acres.

*Engineering, Tool Making, &c.*

	Per Cent. Employed.						
	Engi- neering, Tools.	Iron Manu- factures.	Coal Mining.	Vehicles.	Railway Service.	Total Primary.	Total Second- ary.
<b>Stafford—</b>							
Willenhall .....	62·5	3·3	3·6	—	—	73·3	24·9
Quarry Bank .....	39·2	7·9	12·3	—	—	71·7	25·0
Darlaston .....	51·7	8·2	4·4	—	—	71·3	26·0
Coseley .....	29·5	15·5	16·2	—	—	70·2	26·7
Rowley Regis .....	32·5	6·9	13·9	—	—	69·1	28·2
Wednesbury .....	35·6	16·5	1·7	3·6	—	68·8	27·7
Bilston .....	32·4	17·1	5·9	—	—	64·6	31·8
Brierley Hill .....	21·2	11·2	5·8	—	—	64·6	31·4
Heath Town .....	30·9	10·4	6·0	—	—	63·3	33·5
Tipton .....	27·9	12·5	8·4	—	—	63·3	33·0
Uttoxeter .....	22·6	—	—	—	3·2	42·4	51·5
<b>Worcester—</b>							
The Lye and Wollescote	40·9	—	10·0	—	—	68·3	27·7
Redditch .....	24·2*	—	—	12·1	—	62·2	34·4
Oldbury .....	19·5	5·5	4·1	2·8	—	60·5	35·9
<b>Durham—</b>							
Hartlepool .....	32·2	—	—	—	—	71·3	26·7
Darlington .....	25·8	3·7	—	—	7·7	51·9	24·0
<b>Northumberland—</b>							
Benwell and Fenham ...	33·4	—	16·0	—	—	69·1	27·8
<b>West Riding—</b>							
Cleckheaton .....	28·1	—	7·6	—	—	65·6	32·0
Keighley .....	30·9	—	—	—	—	61·1	36·8
Otley .....	35·3	—	—	—	—	57·8	39·9
<b>North Riding—</b>							
Ormesby .....	40·4	10·9	—	—	—	64·5	31·3
Thornaby .....	30·1	—	—	—	—	65·6	31·1
<b>Lancashire—</b>							
Newton-in-Makerfield ...	25·4	—	10·9	12·3	—	68·9	28·0
Horwich .....	42·1	1·7	1·7	—	—	66·8	29·9
<b>Cheshire—</b>							
Crewe .....	32·9	—	—	—	16·5	61·1	33·7
<b>Lincoln—</b>							
Gainsborough .....	41·0	—	—	—	—	52·5	43·5
Grantham .....	24·9	—	—	—	5·0	48·2	47·1
<b>Wilts—</b>							
Swindon .....	30·2	1·0	—	9·9	10·7	58·1	36·9
<b>Monmouth—</b>							
Llantarnam .....	33·7	10·7	13·5	—	—	74·6	22·6

\* Chiefly needle and pin makers.

Hartlepool, the old town of that name, showed 24·3 per cent. engaged in shipbuilding, and 7·8 per cent. sailors, &c. Textile manufactures occupied 17·0 per cent. in Keighley, 11·5 in Cleckheaton, 7·1 in Horwich. Redditch had 15·5 making fishing tackle, toys, &c., and Thornaby 21·7 engaged in shipbuilding.

## Cotton Manufacture.

	Per Cent. Employed.						Total Seco- ndary.
	Cotton Manu- factures.	Bleaching, Printing, Dyeing.	Other Textile Manu- factures.	Coal Mining.	Engi- neering, Tools.	Total Primary.	
<b>Lancaster—</b>							
Great Harwood .....	60.2	0.4	0.1	5.4	2.1	75.0	22.9
Mossley .....	50.6	5.3	3.9	0.2	3.6	74.2	23.0
Crompton .....	55.7	0.5	1.0	6.9	2.1	74.1	23.7
Whitworth .....	38.9	1.3	0.6	3.8	3.7	72.7	25.5
Brierfield .....	65.0	0.3	0.2	0.6	1.9	72.6	25.4
Turton .....	13.8	28.7	0.9	0.8	4.3	70.8	24.5
Rishton .....	46.4	0.3	—	2.2	2.2	70.5	27.2
Milnrow .....	20.6	1.1	16.6	9.5	4.7	70.5	26.1
Royton .....	53.5	0.6	1.1	2.3	5.9	69.9	27.9
Haslingden .....	45.2	0.8	2.9	0.6	6.3	69.7	27.6
Nelson .....	61.9	0.1	0.3	—	2.2	69.7	28.3
Leyland .....	21.1	11.6	1.5	0.1	5.8	68.6	27.1
Rawtenstall .....	24.8	9.0	7.5	2.0	3.0	68.5	29.0
Littleborough .....	25.9	10.2	12.7	1.6	4.7	68.0	29.2
Bacup .....	30.6	2.4	2.4	3.9	3.8	66.8	30.9
Walton-le-Dale .....	49.3	2.2	0.3	—	3.1	66.8	29.9
Darwen .....	38.0	0.2	0.4	3.6	3.9	66.5	30.8
Padiham .....	46.0	3.0	0.1	3.3	6.5	66.4	31.3
Church .....	17.0	20.5	0.1	4.5	11.8	66.1	31.1
Radcliffe .....	16.1	16.0	0.3	11.5	7.6	65.5	31.9
Tottington .....	20.3	28.3	1.0	0.1	4.1	65.4	31.3
Colne .....	48.5	0.6	0.2	—	7.2	64.7	32.9
Ramsbottom .....	30.6	11.0	2.8	0.1	5.9	63.9	32.8
Middleton .....	23.8	21.0	1.6	0.5	5.9	63.1	34.2
Heywood .....	34.2	1.2	3.0	0.3	10.5	60.6	36.3
Clitheroe .....	39.2	1.2	0.1	0.1	1.6	58.8	36.9
Chorley .....	20.5	8.9	0.4	10.9	4.7	57.2	39.2
Hurst .....	31.4	0.1	0.1	9.4	9.0	57.0	40.6
Whitefield .....	6.7	22.7	0.4	0.6	3.6	51.7	44.0
<b>West Riding—</b>							
Todmorden .....	37.0	—	1.7	0.9	9.7	66.2	31.6
Hebden Bridge .....	13.6	—	14.8	—	7.5	63.3	34.2
Barnoldswick .....	64.0	—	0.1	—	0.5	72.7	25.5
<b>Chester—</b>							
Dukinfield .....	24.7	0.6	0.8	10.7	18.2	63.3	33.1
Bollington .....	26.7	10.0	0.4	0.9	2.8	60.4	34.1
Marple .....	13.7	8.6	0.1	1.2	4.1	44.4	50.4
<b>Derby—</b>							
Glossop .....	31.6	9.1	0.7	—	4.8	62.8	33.4
New Mills .....	7.8	28.6	0.4	3.6	6.5	58.8	37.3

The numerous workmen who are engaged in bleaching, printing, and dyeing in the West Riding are not shown, save in a few cases in the Notes.

There are not many instances in which other occupations than those referred to in the above table rose to any importance. Stone

quarrying employed 19·5 per cent. of the Whitworth men; 12·6 per cent. in Bacup, 4·5 in Haslingden, 4·0 in Rawtenstall. Paper, printing, &c., 9·1 per cent. in Darwen, 6·9 in Glossop, 5·4 in Rishton, 4·6 in Radcliffe. In Darwen paper makers and paper stainers were numerous, and in Glossop and Radcliffe paper makers. In Leyland the indiarubber and guttapercha manufacture employed 9·9 per cent.; in Todmorden workers in wood exceeded ordinary proportions, the excess equalling 5·0 per cent. Then there were workers in dress (undefined) equal to 14·0 per cent. at Hebden Bridge, and 10·0 per cent. at Rawtenstall, and there were 4·0 per cent. of slipper makers at Bacup.

*Textile Manufactures and Engineering.*

	Per Cent. Employed.							
	Cotton Manu- factures.	Woollen Manu- factures.	Silk Manu- factures.	Bleach- ing, Printing, Dyeing.	Coal Min- ing.	Engi- neering, Tools.	Total Primary.	Total Second- ary.
Lancaster—								
Chadderton.....	37·5	—	—	1·2	3·5	23·4	74·4	23·3
Accrington .....	12·8	—	—	8·9	5·2	24·6	62·9	34·2
Reddish .....	20·6	—	—	4·4	0·3	18·2	60·7	36·1
Ashton - under - Lyne .....	23·5	—	—	0·2	5·4	10·6	50·6	46·2
Chester—								
Staleybridge .....	29·2	—	—	4·4	0·8	16·1	61·9	33·9
Hyde .....	17·3	—	—	2·2	6·2	16·8	60·5	36·3
West Riding—								
Brighouse .....	7·4	3·8	10·1	4·4	0·5	14·4	61·7	36·3
Sowerby Bridge....	10·6	11·4	—	—	0·1	19·5	58·4	39·1

There were no special developments of other primary industries within this group.

*Woollen Manufactures.*

Bleaching, printing, dyeing, &c., employed 5·0 per cent. of the working males in Saddleworth, 2·6 in Dewsbury, and 2·4 in Batley. The excess of railway service in Mirfield above an ordinary quota equalled 9·9 per cent. In Horbury the iron manufacture employed 10·3 per cent. In Pudsey the excess of bootmakers was 6·3 per cent. The proportions of agriculturists are not given for the Yorkshire districts, but in Wellington these amounted to 8·9 per cent.

	Per Cent. Employed.						
	Woollen Manu- factures.	Cotton Manu- factures.	Engi- neering, Tools.	Coal Mining.	Stone Quarry- ing.	Total Primary.	Total Second- ary.
West Riding—							
Morley.....	25.0	0.7	4.1	20.4	8.2	70.5	27.5
Golcar.....	51.4	4.2	3.5	—	—	70.4	27.5
Linthwaite.....	41.1	4.1	4.9	—	—	60.5	30.8
Haworth.....	44.9	1.6	5.9	—	7.0	66.1	32.2
Farsley.....	30.3	0.3	22.8	—	—	65.9	31.9
Saddleworth.....	24.2	8.6	11.3	0.1	—	65.8	31.2
Batley.....	29.3	1.3	5.7	15.6	—	65.5	32.5
Elland.....	20.8	10.3	9.7	0.4	5.6	64.8	32.7
Soothill Nether.....	33.7	0.4	3.6	12.9	—	63.4	34.6
Holmfirth.....	35.9	1.2	4.7	0.3	—	62.9	33.5
Mirfield.....	17.4	1.9	4.0	13.5	—	60.6	36.8
Horbury.....	15.6	—	4.7	10.6	—	60.4	36.4
Baildon.....	30.0	2.7	7.1	—	—	60.0	36.8
Pudsey.....	23.4	1.0	10.2	0.9	—	59.0	38.4
Clayton.....	23.9	3.4	3.1	0.4	—	58.8	37.4
Dewsbury.....	23.4	0.3	6.0	8.6	—	57.1	40.5
Yeadon.....	37.2	0.5	3.4	—	—	56.6	40.3
Bingley.....	24.6	2.0	7.0	0.2	4.5	56.0	41.1
Queensbury.....	25.6	2.0	7.7	2.7	8.9	55.3	42.5
Somerset—							
Wellington.....	19.5	—	4.5	—	—	51.1	44.2

*Other Makers of Textile Fabrics and Articles of Dress.*

Urban District and County.	Per Cent. Employed.								
	Silk Manu- factures.	Lace Manu- factures.	Ho- siery Manu- factures.	Carpet Manu- factures.	Hat Manu- factures.	Straw Hat Manu- factures.	Boot Manu- factures.	Total Pri- mary.	Total Sec- ondary.
Leek..... Stafford	28.5	—	—	—	—	—	—	52.1	43.7
Congleton..... Chester	14.9	—	—	—	—	—	—	51.6	43.6
Macclesfield.... „	21.5	—	—	—	—	—	—	45.5	49.7
Long Eaton..... Derby	—	35.9	—	—	—	—	—	67.1	30.3
Hinckley..... Leicester	—	—	27.4	—	—	—	21.7	63.9	33.2
Kidderminster..... } Worcester	—	—	—	30.2	—	—	—	53.4	42.3
Denton..... Lancaster	—	—	—	—	41.0	—	—	69.8	28.0
Bredbury..... Chester	—	—	—	—	18.5	—	—	60.9	35.1
Luton..... Bedford	—	—	—	—	—	28.6	—	45.7	51.4

		Per Cent. Employed.						
		Boot Manu- factures.	Skins, Leather.	Engi- neering, Tools.	Hosiery.	Stone Quarry- ing.	Total Primary.	Total Second- ary.
Rushden....	Northampton	65·6	2·6	0·7	—	—	74·3	24·3
Kettering	„	45·7	2·0	3·8	—	—	63·2	34·1
Wellingborough	„	26·4	5·5	3·8	—	—	56·2	40·9
Stafford .....	Stafford	25·4	0·8	9·7	—	—	54·7	40·3
Stone .....	„	30·9	—	2·5	—	—	52·0	42·8
Sheepshed .....	Leicester	24·2	—	1·8	17·8	12·2	71·4	26·5
Chesham.....	Bucks	30·1	5·1	2·1	—	—	52·0	44·6

In Leek 6·0 per cent. were bleachers, printers, and dyers; in Macclesfield 2·6 per cent. In Congleton 13·8 per cent. were fustian manufacturers, and in Macclesfield 5·8 were cotton manufacturers. In Long Eaton the excess beyond the ordinary of railway servants came to 15·0 per cent., and 5·1 per cent. were carriage builders. In Kidderminster engineering, &c., employed 6·1 per cent., in Denton 6·3, in Bredbury 11·0, and in Luton 10·7 per cent. In Kidderminster 3·2 per cent. were wool and worsted manufacturers, 3·5 were textile dyers. In Denton 9·1 per cent. were coal miners. In Bredbury 4·7 were cotton manufacturers, 4·8 were bleachers, printers, and dyers of textile goods. In Wellingborough 8·1 per cent. were railway servants in excess, and in Stafford 3·0 per cent.

In some of these urban districts considerable numbers were employed in agriculture, as 9·6 per cent. in Sheepshed, 7·7 in Congleton, 6·8 in Bredbury.

#### Other Manufactures, &c.

		Per Cent. Employed.							
		Watch Mak- ing.	Wood, Furni- ture.	Ship- build- ing.	Engi- neer- ing, Tools.	Coal Min- ing.	Alkali, Soap.	Total Pri- mary.	Total Sec- ondary.
Prescot .....	Lancashire	20·9	—	—	3·5	15·6	—	65·0	29·2
Chipping Wycombe....	Bucks	—	43·7	—	—	—	—	50·8	46·0
Widnes.....	Lancashire	—	—	—	—	—	33·5	58·8	37·6
Hebburn.....	Durham	—	—	30·4	13·0	18·3	—	74·8	23·7
Jarrow .....	„	—	—	29·8	21·7	—	—	70·2	27·5

The copper manufacture employed 5·1 per cent. in Widnes, 5·2 in Hebburn; and the iron and steel manufacture 7·3 per cent. in Jarrow.



## Commercial and Railway Towns.

		Per Cent. Employed.						
		Seamen, Haige, Docks.	Com- mercial Clerks.	Railway Service. (Excess)	Military.	Engi- neering, Tools.	Total Primary.	Total Second- ary.
Goole.....	W. Riding	30.2	4.2	7.2	—	6.1	60.4	37.0
Maryport.....	Cumberland	19.3	1.5	—	—	6.9	59.6	36.0
Barry.....	Glamorgan	29.9	1.7	5.2	—	11.4	59.5	36.5
Newhaven.....	Sussex	29.0	1.2	6.0	0.9	4.5	58.8	36.9
Northam.....	Devon	19.7	0.2	—	—	2.0	53.1	35.8
Harwich.....	Essex	18.7	1.4	—	19.8	2.8	56.4	38.3
Grays Thurrock .....	"	19.6	3.1	—	—	5.8	50.2	43.8
Fleetwood.....	Lancaster	20.0	1.8	—	7.2	5.2	50.0	46.5
Gravesend.....	Kent	20.8	3.1	—	8.8	2.8	48.0	46.2
Cowes.....	Hants	15.8	2.6	—	—	14.3	45.8	49.9
Whitstable*	Kent	18.0	1.4	—	—	0.6	32.6	62.5
Eastleigh and Bishop- stoke.....	Hants	—	0.7	14.3	—	8.3	54.8	41.9
Peterborough .....	Northampton	—	2.1	22.5	—	7.4	48.4	47.9

\* There is here an element of residential seaside population.

Northam includes the old port of Appledore and the new watering place Westward Ho! Grays Thurrock includes Tilbury Docks. Harwich includes Dovercourt, which is a kind of watering place.

It is rather surprising that in these business places there were so few commercial clerks; other members of the commercial class were, perhaps, at least equally numerous.

In Maryport coal miners amounted to 19.5 per cent. Ship-building employed 12.9 per cent. in Northam, 11.3 in Cowes, 3.8 in Barry. Fishing employed 5.5 per cent. in Newhaven, 6.1 in Fleetwood, and 8.6 in Whitstable. Cement and plaster employed 6.4 per cent. in Grays Thurrock. The number of seamen, &c., assigned to Fleetwood is an estimate. Railway coach and wagon building employed 27.0 per cent. in Eastleigh and Bishopstoke (near Southampton), and 2.1 in Peterborough. It is noticeable that agriculture employed 9.4 per cent. in Northam.

*Military Places.*

		Per Cent. Employed.						
		Military.	Seamen, Barge, &c.	Ship- building.	Engi- neering, Tools.	Stone Quarry- ing.	Total Primary.	Total Second- ary.
Cheriton.....	Kent	77·4	—	—	0·4	—	80·9	17·7
Farnborough.....	Hants	69·2	—	—	0·5	—	77·1	19·7
Portland.....	Dorset	52·8	3·2	—	1·9	8·2	74·6	21·1
Aldershot.....	Hants	66·7	—	—	0·6	—	74·1	22·9
Sheerness.....	Kent	43·5	—	8·9	9·4	—	73·2	22·1
Walmer.....	"	63·5	—	—	0·4	—	70·0	26·7
Caterham.....	Surrey	37·6	—	—	0·9	—	56·1	39·2
Colchester.....	Essex	24·2	—	—	10·3	—	48·9	47·2
New Windsor.....	Berks	29·0	—	—	0·8	—	44·1	50·3
Frimley.....	Surrey	24·7	—	—	0·8	—	43·7	50·7
Dover.....	Kent	19·7	6·6	—	3·4	—	42·3	52·1

Cheriton includes Shorncliffe Camp, and Walmer the Royal Marine Depôt. Farnborough includes North Camp, Aldershot, and Frimley the "Deep Cut" Royal Field Artillery. Caterham is the seat of the Guards' depôt for recruits. There is something of a residential character about Caterham and Frimley, and Colchester, Windsor, and Dover partake of the characteristics of ordinary trading towns, but the remaining districts showed low ratios of secondary workers, as was to be expected, considering the small support the rank and file are likely to give to traders, &c.

*Ordinary Trading Towns.*

There are 69 of these in the list; and the principal primary employments disclosed are as follows, the total number of working males being 227,781, viz. :—

Agriculture.....	11,849, or 5·2 per cent.
Engineering, tools .....	8,753, „ 3·8 „
Railway service (excess) ....	5,358, „ 2·4 „
Commercial clerks .....	5,239, „ 2·4 „
Printing, paper, &c. ....	5,772, „ 2·5 „
Brewers, &c. ....	3,570, „ 1·6 „
Chemicals, oil, skins .....	3,245, „ 1·4 „

The towns showing 10·0 and more of agriculturists were eight in number, viz. :—

		Per Cent. Employed.				
		Agricul- ture.	Engineer- ing, Tools.	Commer- cial Clerks.	Total Primary.	Total Secondary.
Fareham.....	Hants	13.9	1.8	1.3	42.0	49.3
East Grinstead.....	Sussex	11.9	1.1	1.8	26.9	67.1
Halstead.....	Essex	11.4	10.9	1.7	34.2	60.1
Whitchurch.....	Salop	11.3	5.7	1.1	31.9	60.5
Sleaford.....	Lincoln	11.3	3.8	2.7	25.8	69.0
Sandbach.....	Cheshire	10.8	5.6	1.1	37.0	57.1
Alton.....	Hants	10.7	2.6	2.1	27.5	65.9
Hexham.....	Northumberland	10.1	3.2	2.7	38.9	55.8

Engineering reached 7 per cent. and upwards in the following places :—

		Per Cent. Employed.				
		Engineer- ing, Tools.	Agricul- ture.	Commer- cial Clerks.	Total Primary.	Total Secondary.
Braintree.....	Essex	8.1	8.3	1.3	33.1	59.9
Warwick.....	Warwick	8.0	—*	1.8	32.8	61.4
Bury St. Edmunds....	Suffolk	7.8	6.4	2.2	39.6	55.4
Slough.....	Bucks	7.2	6.4	2.4	34.5	59.8
Oswestry.....	Salop	7.1	2.9	1.5	34.7	58.1
Hitchin.....	Herts	7.1	7.5	2.0	30.4	65.0

\* Not stated.

The railway service reached 5 per cent. and upwards (I mean the surplus over usual requirements) in a good many of these towns, viz. :—

		Per Cent. Employed.					
		Railway Service.	Engineer- ing, Tools.	Agricul- ture.	Commer- cial Clerks.	Total Primary.	Total Second- ary.
Berwick-upon-Tweed	Northumberland	8.1	5.8	5.4	2.2	43.1	52.8
Tonbridge.....		8.5	2.4	5.5	2.5	34.2	58.8
Newton Abbot.....	Devon	7.0	6.1	4.9	1.6	34.5	59.2
Watford .....	Herts	7.0	3.0	2.9	3.3	22.7	71.9
Boston.....	Lincoln	6.6	4.6	8.0	2.0	40.1	55.4
Market Harborough	Leicester	6.5	1.3	5.3	2.3	38.9	55.9
Guildford.....		6.2	2.7	3.4	2.9	23.8	71.3
Salisbury.....	Wilts	6.0	2.0	3.1	2.5	25.0	67.3
Penzance.....	Cornwall	5.7	2.6	2.3	1.7	36.2	58.4
Tewkesbury....	Gloucester	5.4	4.4	7.1	2.1	28.9	66.1
Melton Mowbray	Leicester	5.1	2.7	4.9	1.8	43.1	51.2
Stratford-on-Avon	Warwick	5.0	3.6	—	2.6	33.7	60.9

Besides these, three of those previously shown had more than 5 per cent. surplus of railway servants, viz., Slough 7·7 per cent., Oswestry 7·2, and Hitchin 6·5.

I shall presently detail the instances in which other industries attain a moderate amount of importance, meantime I give the names of the remainder of the 69 towns, viz. :—

	Per Cent. Employed.			Per Cent. Employed.	
	Total Pri- mary.	Total Sec- ondary.		Total Pri- mary.	Total Sec- ondary.
Bridport..... Dorset	39·2	47·8	Penrith..... Cumberland	35·5	57·8
Ulverston..... Lancaster	38·9	55·2	Deal..... Kent	33·6	59·0
Carnarvon .....	37·9	56·4	Bishopstortford Hertford	33·2	60·7
Lichfield..... Stafford	37·0	54·8	Gt. Berkhamsted .....	33·2	60·3
Bridgend .....	36·6	55·3	Knutsford..... Chester	33·0	57·3
Newport I.W..... Hants	36·0	57·7	Abingdon..... Berks	32·1	61·7
Great Driffield...E. Yorks	34·8	60·0	Sherborne..... Dorset	31·6	59·6
Truro..... Cornwall	34·5	59·1	Alnwick Northumberland	31·5	62·6
Maidstone..... Kent	32·9	61·2	Leighton Buzzard Bedford	30·6	63·6
Barnstaple .....	32·6	61·4	St. Albans..... Hertford	30·2	64·6
Ripon..... W. Yorks	32·4	63·0	Hertford .....	29·6	64·4
Taunton..... Somerset	32·4	62·3	Winchester..... Hants	28·3	63·7
Ormskirk..... Lancaster	31·2	62·6	Monmouth .....	28·0	65·8
Poole .....	31·1	61·2	Cheltenham... Gloucester	24·2	70·0
Weymouth .....	27·9	63·9	Farnham..... Surrey	24·0	70·7
Wellington..... Salop	24·4	67·9	Cirencester... Gloucester	23·9	70·7
Cambridge .....	23·9	69·9	Henley..... Oxford	21·5	71·2
Newbury..... Berks	20·3	73·7	Reigate..... Surrey	21·4	71·9
			Bideford..... Devon	20·9	72·8
Lewes..... Sussex	36·8	57·2	Dorking..... Surrey	20·5	73·4
Cockermouth Cumberland	36·3	57·3	Maidenhead..... Berks	19·3	74·2
Louth..... Lincoln	35·7	58·1	Horsham..... Sussex	18·2	76·8

The small proportions of commercial clerks are everywhere noticeable; the other members of the commercial class, as already observed, are usually almost equally numerous, and therefore we may consider the figures as doubled, when comparing the importance of the commercial element with that of other industries.

Special occupations not already noticed were as follows in some of the 69 towns :—

	Per cent.		Per cent.
Military .....	5·7 in Berwick	Paper, print- ing.....	3·9 in Cambridge
	4·9 „ Bury St. Ed- munds		5·0 „ Guildford
	8·0 „ Newport I.W.		4·5 „ Great Driffield
	4·6 „ Weymouth		4·4 „ Barnstaple
	5·4 „ Winchester		
Fishermen {	4·9 „ Berwick	Cabinet making ....	4·0 „ „
	4·9 „ Penzance		
* Boot maker....	5·4 „ Melton Mowbray	Other wood workers....	5·4 „ Bury St. Ed- munds
Stay maker .....	5·5 „ Market Har- borough		
Straw hat maker .....	5·0 „ St. Albans	Brewer .....	6·4 „ Lichfield
* Dress (un- defined) {	6·4 „ Cockermouth	6·7 „ Bishop Stort- ford	4·5 „ Hertford
6·1 „ Carnarvon			
Seamen, dock labourers {	6·1 „ Penzance	5·7 „ Alton	5·3 „ Farnham
	5·7 „ Poole		
	4·3 „ Boston	6·8 „ Ulverston	6·0 „ Poole
	4·3 „ Bideford		
Paper, print- ing .....	5·1 „ Ulverstone	Chemicals .....	10·8 „ Sandbach
	6·4 „ Maidstone		
		Skins, leather	5·9 „ Newton Abbot
		Chemicals {	5·2 „ Great Driffield
		and skins {	5·4 „ Ripon

\* In excess of ordinary ratio.

These figures show that no primary industry reached an important development in any of the 69 towns.

Not to weary my readers with details in relation to the secondary classes, I have collected in Table III the average ratios of the principal of those classes in the groups into which I have divided the 590 smaller urban districts. It will be seen that in groups comprehending 263 of the 300 industrial towns the "food and drink" class does not employ so many as 7 per cent. of the working males; and the same may be said of the 35 provincial suburban areas which are industrial in character. In the 113 coal and iron mining districts, and in a very few others, this ratio is below 5 per cent. on an average. In the ordinary trading towns the similar ratio rose to 10·3 per cent., and in the 39 residential places, which will presently be enumerated, it reached 12·6 per cent.

I will only refer to two other facts shown by Table III. The first is, that the building class varies with the other classes to a very noticeable extent, and is low in the places where other secondary classes are low, notwithstanding the rapid growth of population in many of those districts.<sup>5</sup> The second is, that the

<sup>5</sup> Table IV is intended to show the growth of the smaller towns by classes; the colliery towns were amongst the most progressive, yet in them the building trade fell to almost its lowest point.

dress makers and dealers fell below the level of ordinary trading towns in very many suburban places, for the obvious reason that many inhabitants of such places resort to the central districts for their supplies. A similar observation applies to the food class, for the reason that the central districts require to contain numerous restaurants, &c., for the service of a floating "day population" largely coming from the suburbs.

*Residential Places.*

	Per Cent. Employed.			Per Cent. Employed.	
	Total Primary.	Total Secundary.		Total Primary.	Total Secundary.
<b>Lancashire—</b>			<b>Kent—</b>		
Southport .....	29·1	64·5	Herne Bay .....	15·5	78·0
Birkdale .....	27·6	65·9	Tunbridge Wells .....	21·6	70·5
Lytham .....	27·1	66·2	Southborough .....	27·6	65·1
St. Anne's .....	26·1	67·2	Margate .....	19·6	73·2
Blackpool .....	19·3	75·4	Broadstairs .....	24·9	66·7
Morecambe .....	18·8	75·7	Ramsgate .....	28·5	64·6
<b>West Riding—</b>			Folkestone .....	25·0	68·3
Ilkley .....	32·8	61·7	<b>Sussex—</b>		
Harrogate .....	21·0	74·6	Bexhill .....	21·7	72·9
<b>North Riding—</b>			Eastbourne .....	17·5	76·3
Scarborough .....	21·7	71·9	Worthing .....	22·3	72·5
<b>East Riding—</b>			Littlehampton .....	24·7	70·3
Bridlington .....	24·3	70·7	Bognor .....	18·2	76·1
<b>Derby—</b>			<b>Hants—</b>		
Buxton .....	21·7	70·4	Ryde .....	23·5	68·6
Matlock .....	29·6	62·8	Sandown .....	23·3	63·2
<b>Worcester—</b>			Ventnor .....	23·4	67·9
Malvern .....	30·3	61·1	<b>Somerset—</b>		
<b>Warwick—</b>			Clevedon .....	22·1	72·3
Leamington .....	25·5	69·0	Weston-super-Mare .....	19·6	74·3
<b>Carnarvon—</b>			<b>Devon—</b>		
Llandudno .....	16·0	78·1	Exmouth .....	27·0	66·1
<b>Suffolk—</b>			Torquay .....	22·3	69·8
Felixstowe .....	27·0	68·0	Paignton .....	25·2	68·2
<b>Essex—</b>			Ilfracombe .....	24·9	69·0
Clacton .....	16·8	78·0			
Southend .....	23·6	69·5			

The industries which attained a noticeable figure were:—

	Per cent.		Per cent.
Agriculture	8.0 in Malvern	Agriculture	5.6 in Bognor
	8.7 „ Matlock		9.5 „ Clacton
	7.6 „ Sandown		6.9 „ Ryde
	9.7 „ Southborough		6.1 „ Littlehampton
	8.2 „ Exmouth		5.5 „ Margate
	8.8 „ Felixstowe	Seamen, &c.	5.3 „ Folkestone
	14.4 „ Paignton		4.8 „ Exmouth
	8.4 „ Broadstairs		4.5 „ Ventnor
	11.5 „ Ilfracombe		4.5 „ Morecambe
	8.3 „ Littlehampton		4.3 „ Herne Bay
	12.2 „ Worthing		4.1 „ Southport
	11.3 „ Bexhill		4.0 „ Scarborough
	9.6 „ Clevedon		5.2 „ Ramsgate
	5.6 „ Tunbridge Wells		8.9 „ Felixstowe
			6.1 „ Southborough
		Fishing .....	
		Military .....	
		Bricks, &c. ....	

These facts call for little remark ; the usual industrial pursuits are almost absent, but no doubt many commercial men, not shown in the tables, were amongst the visitors and residents.

It is indeed necessary to remember that in these residential places, and also in suburban places generally, many men classed correctly as engaged in primary industries are really residents employing local labour, so that in estimating the extent to which that particular place is engaged in local industries, a large deduction has to be made from the total of the primary classes. In the case of suburbs this source of confusion would be removed by massing them with the central town ; this process is, however, not easily to be carried out with the aid of the brief summaries of occupations at present available.

#### *Suburbs (Provincial).*

The 55 places treated as suburbs or other dependencies of larger towns might easily have been added to. Such places as Benwell, in Northumberland, and Swinton (with Pendlebury), in Lancashire, might have been held to belong to Newcastle and Manchester respectively, and Wallsend might have been struck out as being somewhat remote from Newcastle. But these are matters of little consequence beside the fact that in the main the urban districts thus distinguished are really dependencies. I shall group them according to their situations, taking first the industrial districts connected with certain northern towns.

Urban District.	Near.	Per Cent. Employed.							
		Engi- neering, Tools.	Ship- build- ing.	Coal Min- ing.	Com- mer- cial Clerks.	Brick, Glass, &c.	Sea- man, Barge, Docks.	Total Pri- mary.	Total Secun- dary.
Willington Quay	Tynemouth	20·3	34·0	0·8	—	—	—	65·6	31·4
Walker.....	Newcastle	14·6	43·7	12·7	—	—	—	74·9	23·6
Wallsend .....	"	21·8	31·9	9·8	—	—	—	73·3	24·9
Gosforth .....	"	3·0	—	21·5	7·1	—	—	47·5	47·9
Southwick.....	Sunderland	18·5	28·3	13·2	—	7·3	6·6	77·5	21·0
Sandal Magna.....	Wakefield	9·3	—	19·6	—	—	—	59·3	38·3
Ravensthorpe.....	Dewsbury	4·6	—	9·9	—	—	—	61·0	36·6
Shipley.....	Bradford	10·5	—	—	—	—	—	52·6	44·7
Prestwich.....	Manchester	2·2	—	—	9·6	—	—	52·8	40·1
Failsworth .....	"	10·8	—	6·7	—	—	—	59·5	37·3
Droylsden.....	"	17·1	—	1·8	—	—	—	58·8	38·0
Audenshaw .....	"	19·4	—	5·5	—	—	—	56·1	40·3
Gorton .....	"	35·5	—	—	—	—	—	58·9	38·4
Eccles .....	"	12·3	—	—	7·2	—	—	43·0	47·0

The principal industries not tabulated above were :—

	Per cent.
Woollen and worsted manufactures ....	29·8 in Ravensthorpe
	17·9 " Shipley
	27·7 " Failsworth
Cotton manufactures, bleaching, print- ing and dyeing, and other textile manufactures .....	23·0 " Droylsden
	12·5 " Prestwich
	7·8 " Eccles
	6·8 " Audenshaw
Hat making (not straw) .....	11·1 " "
	9·0 " Sandal Magna
Railway service (above ordinary) .....	5·5 " Gorton

I next take the remaining industrial places in the north :—

Urban District.	Near	Per Cent. Employed.							
		Engi- neering, Tools.	Textile Manu- fac- tures.	Sea- men, Barge, Docks.	Com- mer- cial Clerks.	Mili- tary.	Rail- way Service.	Total Pri- mary.	Total Secun- dary.
Balby with Hexthorpe Doncaster }		20·4	—	—	—	—	17·6	65·5	31·9
Fulwood.....	Preston	—	—	—	—	47·0	—	74·5	20·7
Heaton Norris.....	Stockport	—	9·3	—	9·9	—	—	55·4	37·3
Cheadle and Gatley .....	"	—	10·7	—	4·3	—	5·5	45·5	48·1
Hazelgrove .....	"	—	9·5	—	4·3	—	—	45·8	49·6
Waterloo.....	Liverpool	5·5	—	9·7	9·3	6·8	—	44·4	51·1
Litherland.....	"	5·5	—	16·7	6·9	—	—	43·9	52·3
Lower Bebington .....	"	4·4	—	—	8·1	—	—	45·8	47·4
Hoole.....	Chester	5·6	—	—	—	—	18·6	48·2	45·1
*Cleethorpe.....	Grimsby	6·5	—	12·5	3·7	—	—	36·8	59·3
Beeston.....	Nottingham	9·0	21·7	—	—	—	—	59·5	37·2
West Bridgford .....	"	9·4	9·0	—	—	—	—	52·8	40·4
Carlton.....	"	4·6	6·2	—	—	—	34·8	60·0	37·3

\* This place is partly a seaside resort ; hence the high ratio of secondary population.



The figures under the head of textile manufactures in Beeston and West Bridgford represent lacemakers only.

The principal industries not referred to in the above table were :—

	Per cent.
Railway coach makers, &c. ....	12·4 in Balby-with-Hexthorpe
Vehicles (all classes) .....	10·1 „ Beeston
Hat making (not straw) .....	11·8 „ Hazelgrove
Coal mining .....	5·1 „ „
Chemicals, skins, working in .... {	7·7 „ Litherland
	5·1 „ Lower Bebington
Soap manufacture .....	11·5 „ „
Fishing .....	11·1 „ Cleethorpe
	10·2 „ Cheadle and Gatley
Agriculture .....	9·2 „ Hazelgrove
	6·7 „ Hoole

The remaining industrial suburbs are :—

Urban District.	Near	Per Cent. Employed.							
		Engi- neer- ing, Tools.	Boot- maker.	Ship- build- ing.	Sea- men, Barge, Docks.	Com- mer- cial Clerks.	Mili- tary.	Total Pri- mary.	Total Secun- dary.
Erdington.....	Birmingham	14·4	—	—	—	7·1	—	50·9	43·2
Kingswood.....	Bristol	4·0	45·6	—	—	—	—	65·5	32·2
Penarth.....	Cardiff	4·2	—	—	20·3	4·9	—	50·6	43·6
Gillingham.....	Chatham	11·2	—	10·5	—	—	33·2	68·6	26·3
Gosport.....	Portsmouth	2·9	—	4·0	—	—	32·0	55·5	37·5
East Stonehouse.....	Plymouth	4·7	—	—	—	—	24·7	51·6	41·0
Itchen.....	Southampton	8·7	—	9·1	16·6	—	—	47·9	46·4
Heavitree .....	Exeter	—	—	—	—	—	18·1	46·0	48·0

The other industries were :—Coal mining, employing 6·3 per cent. in Kingswood ; the (extra) railway service employing 5·9 per cent. in Penarth ; and agriculture employing 10·5 per cent. in Heavitree, 4·1 in Kingswood. There were evidently considerable numbers of primary workers in Erdington and other urban districts, the particulars of whom we do not possess, and many of these, perhaps, were agriculturists. The counties in whose abstracts of small towns the census tables do not particularise agriculturists are Lancashire, Yorkshire, Durham, Stafford, and Warwick.

There remain twenty of the provincial suburban districts which I do not reckon as industrial, for wherever the primary workers exceed 38 per cent., this is due to the presence, merely residential, of clerks, merchants, &c.

Urban District.	Near.	Per Cent. Employed.						
		Com- mer- cial Clerks.	Engi- neer- ing, Tools.	Sea- men, Barge, Dock Ser- vice.	Rail- way Ser- vice.	Agri- cul- ture.	Total Pri- mary.	Total Sec- ondary.
Whitley and Monkseaton	Tynemouth }	7.3	9.3	—	—	3.8	41.4	53.1
Levenshulme.....		12.7	6.3	—	—	—	46.8	47.8
Withington .....	Manchester	10.8	2.7	—	—	—	49.2	42.7
Moss Side .....	"	16.5	2.8	—	—	—	47.7	45.8
Stretford .....	"	11.0	6.8	—	5.0	—	46.5	48.1
Urmston .....	"	13.6	3.5	—	—	—	49.1	43.8
Ashton-upon-Mersey	"	7.7	3.3	—	—	12.4	44.4	47.4
Sale .....	"	8.4	4.6	—	—	10.1	41.2	51.0
Altrincham .....	"	3.3	15.7	—	—	4.6	30.3	63.6
Great Crosby .....	Liverpool	7.1	2.1	2.6	—	—	38.6	54.2
Garston .....	"	3.1	8.5	14.3	—	—	42.9	51.3
Hoyle .....	"	5.2	1.6	—	—	7.0	30.7	60.4
Sutton Coldfield.....	Birmingham	4.7	6.9	—	—	—	39.4	53.8
Tettenhall.....	Wolverhampton	5.0	11.1	—	—	—	40.1	51.0
Winton.....	Bournemouth	1.1	1.2	6.2	—	8.3	20.3	74.5
Branksome .....	"	1.1	1.0	4.5	—	5.8	29.7	60.7
Caversham.....	Reading	3.2	8.6	—	3.8	7.6	38.8	54.2
Hove.....	Brighton	3.6	1.4	—	—	3.6	23.8	69.0
Portslade.....	"	1.6	2.7	—	—	10.1	29.8	65.3
Chesterton.....	Cambridge	2.9	2.7	—	—	8.3	28.6	66.8

The blanks in the above table under "agriculture" are due to the absence of information. The industries not mentioned in it which attained importance were:—

	Per cent.		Per cent.
Printing, paper, &c. {	5.6 in Chesterton	Brick, glass, &c. Biscuit baking Gas works .....	5.7 in Branksome
	4.5 " Stretford		6.5 " Caversham
	4.3 " Moss Side		9.8 " Portslade
Textile manufactures	7.1 " Levenshulme		

### Suburbs (Metropolitan).

This list includes some places which are rather remote, though easily accessible, such as Woking. The industrial element is not widely distributed, and is mainly restricted to eight urban districts, as under:—

	Per Cent. Employed.								
	Agricul- ture.	Engi- neering, Tools.	Gun- powder.	Floor Cloth.	Gas Works.	Mili- tary.	Com- mercial Clerks.	Total Primary.	Total Second- ary.
Chertsey .....	19.2	—	—	—	—	—	1.9	31.9	62.7
Erith .....	2.2	30.6	—	—	—	—	2.5	57.3	36.1
Enfield .....	10.1	18.9	—	—	—	—	3.4	43.3	51.6
Dartford .....	2.8	13.0	—	—	—	—	2.8	41.7	51.3
Waltham Holycross .....	15.5	—	26.0*	—	—	—	2.4	64.6	30.7
Staines .....	3.1	4.1	—	13.5	—	—	3.4	31.9	61.4
Barking Town .....	3.8	—	—	—	13.4	—	2.5	42.1	52.5
Woking .....	11.1	—	—	—	—	14.5	1.4	32.1	63.4

\* With other chemical products, &c.

The remaining industries which attained some importance in these districts were:—

	Per cent.
Electric apparatus manufactures .....	{ 4.4 in Erith 2.2 „ Enfield
Paper manufactures .....	4.1 „ Dartford
Chemicals, oil, &c. ....	4.1 „ „
Manufacturing chemists .....	4.0 „ Barking Town
Indiarubber, guttapercha workers.....	4.9 „ „
Gunsmith .....	7.5 „ Waltham Holy Cross

Amongst the engineering class at Enfield were 1,467 gunsmiths, equal to 11.7 per cent. ; this class, as shown, often includes workers in types, dies, arms, and miscellaneous metal workers.

There remain 44 metropolitan districts, as follows:—

	Per Cent. Employed.			
	Commercial Clerks.	Agriculture.	Total Primary.	Total Secondary.
Wanstead .....	16.3	3.3	45.5	46.0
Ilford .....	14.0	5.9	43.2	49.6
Woodford .....	11.4	5.4	40.4	51.6
Wood Green .....	10.2	1.0	31.4	62.3
Penge .....	9.9	2.6	30.4	61.8
Beckenham .....	9.3	4.0	38.4	52.5
Finchley .....	8.5	8.4	34.3	57.6
Wimbledon .....	8.0	3.2	27.1	66.7
Southgate .....	7.5	7.1	35.5	56.2
The Maudslows .....	7.4	9.4	37.5	55.6
Barnes .....	7.1	5.9	30.0	63.3
Sutton .....	6.9	4.7	26.4	66.8
Friern Barnet .....	6.5	5.3	29.7	62.0
Wealdstone .....	6.5	2.4	25.3	69.1
Ealing .....	6.2	5.1	26.6	65.2
Richmond .....	6.0	4.6	23.7	69.7
Chiswick .....	5.9	2.2	31.9	60.3

	Per Cent. Employed.			
	Commercial Clerks.	Agriculture.	Total Primary.	Total Secondary.
East. Barnet .....	5.8	5.5	33.6	58.4
Carshalton .....	5.8	12.3	32.7	61.8
Acton .....	5.6	2.2	32.5	60.9
Teddington .....	5.5	6.5	26.9	65.3
Romford .....	5.4	10.7	40.7	53.7
Twickenham .....	5.2	6.0	34.1	58.1
Harrow-on-the-Hill .....	5.2	5.7	28.5	63.1
Surbiton .....	4.9	7.5	28.2	65.0
Bexley .....	4.5	14.3	40.1	52.3
Kingston-on-Thames .....	4.5	3.2	20.4	74.1
Brentford .....	4.3	4.7	37.3	55.4
Hendon .....	4.1	6.7	33.6	59.3
Bromley .....	4.1	6.3	28.5	62.9
Barnet .....	3.9	6.4	32.8	58.9
Chislehurst .....	3.6	9.9	38.4	51.7
Hampton .....	3.5	15.1	44.7	46.5
Weybridge .....	3.5	6.2	27.7	65.0
Molesey, East and West .....	3.5	7.6	24.5	69.0
Edmonton .....	3.5	5.0	27.5	66.9
Walton-on-Thames .....	3.4	11.7	35.5	57.5
Esher .....	3.3	11.1	40.8	51.5
Uxbridge .....	3.3	5.4	30.0	63.2
Sevenoaks .....	3.2	6.7	32.2	57.9
Hanwell .....	2.9	4.8	12.6	80.8
Heston and Isleworth .....	2.8	11.4	36.0	57.9
Southall .....	2.7	4.9	33.6	59.4
Epsom .....	2.3	6.4	19.4	74.0

I have arranged these districts in the order of their proportions of commercial clerks: but the degree of wealth is rather to be measured by the ratio of secondary workers.

The occupations of a primary character which appear to have attained some importance, although not referred to in the table, are:—

	Per cent.		Per cent.
Railway service (excess) .....	9.0 in Hendon	Printing, paper, &c. ....	4.6 in Wood Green
	7.3 „ Southall		4.4 „ Penge
	6.8 „ Acton		4.2 „ Wimbledon
	6.8 „ Romford		4.1 „ Kingston-on-Thames
	6.5 „ Brentford	Laundry workers (excess)....	5.5 „ Acton
Bargemen, &c. ....	5.0 „ Wood Green		10.3 „ Heston and Isleworth (Hounslow barracks)
	3.7 „ Twickenham		3.9 „ Kingston-on-Thames (Norbiton barracks)
	5.5 „ Brentford	Military ....	4.8 „ Romford
Engineering, tools, &c. ....	9.5 „ Chiswick		
	7.6 „ Edmonton		
	5.9 „ Bexley	Brewers .....	
Printing, paper, &c. ....	4.9 „ Uxbridge		
	6.9 „ Wealdstone		
	5.2 „ Edmonton		
	4.9 „ Beckenham		

These figures still leave a considerable difference between the estimated total of primary workers and the numbers particularised, and I shall therefore show the ratios of the principal classes of primary workers included amongst "others" in the metropolitan counties. The figures refer to the whole of the smaller urban districts in each county, including those excluded from tabulation.

	Averages per Cent. of Working Males.			
	Middlesex.	Surrey.	Kent.	Essex.
Merchants, money dealers, agents, } insurance and banking service .....	4.4	4.5	2.2	3.7
Electrical apparatus makers .....	0.7	0.6	0.5	0.4
* Innkeeper, food worker, &c. ....	0.8	0.7	0.8	0.6
Sailor, dock, harbour, canal service .....	0.7	0.5	1.3	1.2
† Army and navy.....	0.6	0.8	2.5	1.7
Indefinite (engine drivers, &c.).....	0.7	6.6	0.9	0.8

\* Excess beyond estimated local requirement.

† These are the numbers enumerated in excess of those actually resident in camps, barracks, &c., all of whom I have tabulated under their districts.

It will be obvious that these elements must be very unequally distributed.

### Mixed Towns.

Nearly all the places tabulated under this title are old towns, with a strong infusion of the ordinary trading elements in them. This leads naturally to comparatively high ratios of the secondary classes, although, as shown by Table III, these classes do not reach the level of the ordinary trading towns, but compare with them in the proportion of about 83 to 100. The exceptions to the rule, which perhaps I might better have placed with ordinary industrial towns, are as follows:—

	Per cent.
Arnold (Notts).....	Showing 60.3 primary workers
Horsforth (West Riding) .....	52.7
Wigston Magna (Leicester) ....	61.4
Runcorn (Cheshire) .....	53.8
Panteg (Monmouth) .....	76.2

In each case the leading industry is nearly matched by some others.<sup>6</sup>

\* With perhaps the above exceptions, the towns are so well known that I think it unnecessary to add the name of the county.

We will first take seventeen places where coal mining, agriculture, &c., reach a certain importance :—

	Per Cent. Employed.							
	Coal Mining.	Agriculture.	Pottery.	Brick, Tile, &c.	Engineering, Tools.	Seamen, Barge, Docks.	Total Primary.	Total Secondary.
Durham .....	12·4	—	—	—	6·1	—	41·8	52·4
Bishop Auckland ....	17·6	—	—	—	6·7	—	41·7	53·6
Morpeth .....	13·1	7·1	—	—	9·7	—	40·2	55·7
Tamworth .....	11·5	—	—	—	3·9	—	39·4	54·9
Shepton Mallet .....	—	6·2	—	—	—	—	42·2	52·5
Maldon .....	—	10·0	—	—	9·8	7·8	44·8	49·3
Wilmslow(Cheshire) ..	—	13·5	—	—	1·8	—	40·7	51·3
Dunstable .....	—	9·3	—	—	6·7	—	40·7	54·9
Tiverton .....	—	17·5	—	—	3·9	—	38·6	55·8
East Dereham .....	—	14·0	—	—	7·0	—	36·9	58·1
Andover .....	—	16·7	—	—	4·8	—	36·0	56·8
Wisbech .....	—	17·2	—	—	2·6	—	31·6	63·2
Warminster .....	—	16·0	—	—	6·8	—	31·3	62·2
Newcastle-under-Lyme } .....	9·1	—	9·8	5·7	5·5	—	50·8	44·3
Barton-on-Humber .....	—	13·6	—	16·2	—	—	51·1	43·2
Faversham .....	—	—	—	9·7	—	7·0	40·4	54·0
Bridgwater .....	—	—	—	10·9	—	4·4	38·9	56·0

The chief primary industries not mentioned in the table were as under :—

	Per cent.		Per cent.
Stone quarrier	9·0 in Shepton Mallet	Paper, printing	6·4 in Dunstable
Iron manu- } factures .... }	7·1 „ Newcastle-under-Lyme	Textile manu- } factures .... }	8·0 „ Tiverton
Straw hat .....	8·0 „ Dunstable	Brewer .....	7·0 „ Wilmslow
			7·8 „ Shepton Mallet
			5·2 „ East Dereham

The next seventeen places were engaged in iron making and engineering :—

	Per Cent. Employed.							
	Iron, Steel, Manufactures.	Engineering, Tools.	Coal Mining.	Commercial Clerk.	Railway Service.	Agriculture.	Total Primary.	Total Secondary.
Neath .....	14.3	8.1	10.1	—	—	—	46.9	47.7
Redcar (N. Riding) .....	14.0	6.3	—	4.9	—	—	44.3	48.6
Stourbridge .....	—	16.2	—	—	5.1	—	51.8	42.7
Belper .....	—	19.3	11.5	—	—	—	51.8	44.5
Wakefield .....	—	12.4	10.5	—	—	—	50.5	48.3
Doncaster .....	—	17.4	—	—	12.4	—	49.4	47.8
Rochester .....	—	11.9	—	—	6.5	—	47.0	47.1
Loughborough .....	—	18.0	—	—	—	—	46.9	49.1
Bromsgrove .....	—	16.7	—	—	—	7.8	41.4	54.6
Ashford (Kent) .....	—	13.7	—	—	6.9	—	40.8	54.3
Newark .....	—	12.2	—	—	—	—	39.3	55.5
Bedford .....	—	13.8	—	—	—	—	34.5	60.4
Banbury .....	—	14.6	—	—	—	5.6	34.1	59.6
Stamford .....	—	10.9	—	—	—	6.4	34.0	60.7
Devizes .....	—	10.3	—	—	—	5.8	32.6	59.6
Chippenham .....	—	12.4	—	—	—	—	31.9	62.5
Basingstoke .....	—	9.0	—	—	7.3	4.9	26.0	68.4

The primary industries other than those named above included:—

	Per cent.		Per cent.
Textile manufactures .... {	7.1 in Belper	Skins, leather ....	5.7 in Stourbridge
	5.4 „ Wakefield	Malting, brewing	7.3 „ Newark
Hosiery .....	10.1 „ Loughborough	Railway coach, wagon building .....	8.0 „ Ashford
Boot manufactures .... }	5.5 „ Bromsgrove	Carriage, coach building .....	6.2 „ Bromsgrove
Brick making .....	7.7 „ Stourbridge		7.1 „ Doncaster
Plaster, cement	8.4 „ Rochester		

Next come eleven places concerned in textile manufactures and dress, viz. :—

	Per Cent. Employed.							
	Cotton Manufactures.	Woollen Manufactures.	Hosiery.	Tailor.	Glove Manufactures.	Boot Manufactures.	Total Primary.	Total Secondary.
Skipton .....	18.0	—	—	—	—	—	49.2	47.7
Heckmondwike (W. Riding) .... }	—	14.0	—	—	—	—	50.7	47.5
Trowbridge .....	—	12.0	—	—	—	—	39.5	54.6
Arnold .....	—	—	18.1	—	—	—	60.3	36.9
Bridgnorth .....	—	—	—	—	—	—	37.0	55.9
Horsforth (W. Riding) .... }	—	5.2	—	—	—	—	52.7	43.4
Yeovil .....	—	—	—	—	17.0	—	39.0	56.7
Wigston Magna .....	—	—	9.3	—	—	18.4	61.4	36.3
Nantwich .....	—	—	—	8.9	—	10.5	36.9	56.3
Falmouth .....	—	—	—	16.9	—	—	46.8	48.4
Stroud .....	—	—	—	9.2	—	—	39.0	55.0

The remaining industries to be noticed were—

	Per cent.		Per cent.
Carpet, rug manufac- tures .....	10·5 in Bridgnorth	Iron and steel manu- factures ....	4·9 in Horsforth
"Other textile manufac- tures" .....	7·6 ,, Heckmond- wike	Shipbuilding .....	6·4 ,, Falmouth
	8·7 ,, Horsforth		8·8 ,, Horsforth
Coal mining	17·9 ,, Arnold	Engineering, tools, &c. ....	8·1 ,, Trowbridge
	8·1 ,, Heckmond- wike		7·1 ,, Falmouth
	9·8 ,, Arnold		5·7 ,, Heckmond- wike
Agriculture....	8·5 ,, Bridgnorth	Railway ser- vice .....	16·4 ,, Wigston
	4·9 ,, Wigston		10·7 ,, Skipton
	Magna		Magna

Then thirteen places were engaged in miscellaneous manu-  
factures, viz. :—

	Per Cent. Employed.									
	Floor Cloth.	Elec- tric Appli- ances.	Alkali.	Engi- neer- ing, Tools.	Print- ing.	Paper.	Lea- ther.	Agri- cul- ture.	Total Pri- mary.	Total Secund- ary.
Lancaster .....	9·1	—	—	7·0	—	—	—	—	39·9	56·0
Chelmsford .....	—	11·7	—	10·4	—	—	—	5·1	44·1	50·7
Northwich .....	—	—	16·2	11·1	—	—	—	—	43·8	50·5
Beccles .....	—	—	—	12·1	11·1	—	—	6·7	44·6	51·2
Aylesbury.....	—	—	—	—	10·1	—	—	6·0	40·2	54·5
Frome .....	—	—	—	8·2	10·4	—	—	—	39·0	56·4
Rickmansworth	—	—	—	—	—	12·9	—	7·6	39·8	53·9
Hemel Hempstead	—	—	—	6·2	—	11·1	—	10·0	38·1	57·4
Sudbury .....	—	—	—	—	—	—	—	5·6	40·8	54·5
Beverley .....	—	—	—	4·4	—	—	12·8	—	39·2	55·9
Godalming .....	—	—	—	—	—	—	10·5	—	28·0	66·1
Ware .....	—	—	—	4·4	—	—	—	4·2	39·0	54·9
Whitby .....	—	—	—	—	—	—	—	—	38·9	56·2

The industries not referred to above which attained some  
importance were :—

	Per cent.		Per cent.
Malting.....	15·3 in Ware	Jet worker .....	5·4 in Whitby
Mat making .....	9·8 ,, Sudbury	Brewing .....	5·5 ,, Aylesbury
Silk manufacture	5·5 ,, "	Carriage, &c., building	4·4 ,, Lancaster
Shipbuilding ....	10·4 ,, Whitby	Chemical, oil workers	4·2 ,, "
Seaman, &c. ....	7·8 ,, "	Railway service .....	5·5 ,, Aylesbury

Lastly, commercial and railway towns, and military places  
numbered seventeen, as below :—



	Per Cent. Employed.						
	Seamen, Barge, Dock service.	Ship- building.	Railway Service.	Engi- neering, Tools.	Agri- culture.	Military.	Total Secondary.
Runcorn .....	16.1	—	—	6.9	—	—	40.4
King's Lynn .....	10.5	—	6.3	6.8	—	—	49.8
Teignmouth .....	11.8	—	—	—	7.1	—	60.4
Panteg .....	—	—	21.6	12.0	—	—	22.0
East Retford .....	—	—	12.8	10.0	7.4	—	46.2
Selby .....	—	—	10.8	5.1	—	—	51.5
Carlisle .....	—	—	12.7	9.4	—	—	50.6
Bangor .....	4.8	—	9.3	—	—	—	51.4
Rugby .....	—	—	17.5	11.3	—	—	56.3
Abergavenny .....	—	—	15.0	5.6	5.6	—	56.2
Shrewsbury .....	—	—	9.7	5.3	—	—	61.0
Dartmouth .....	9.5	5.5	—	7.3	—	17.0	42.3
Chatham .....	—	6.8	—	9.0	—	17.2	42.0
Bodmin .....	—	—	—	—	6.7	12.7	54.3
Hythe .....	—	—	—	—	—	17.4	55.3
Chichester .....	—	—	—	—	7.0	13.4	60.6
Dorchester .....	—	—	—	5.0	5.6	9.8	60.1

The other prominent industries were—

	Per cent.		Per cent.
Alkali manufactures	12.8 in Runcorn	Iron manufactures	18.7 in Panteg
Coal mining .....	15.6 „ Panteg	Slate quarrier .....	5.1 „ Bangor

### Principal Towns.

It may be of some interest if I name here the places which in 1901 ranked amongst the smaller towns, although they were of some considerable fame, and each had in 1901 at least 30,000 inhabitants. I exclude new places such as Swindon, Crewe, Eastbourne, &c.

	1901 Popu- lation.		1901 Popu- lation.		1901 Popu- lation.
Cheltenham .....	49,439	Wakefield .....	41,413	Luton .....	36,404
Carlisle .....	45,440	Barnsley .....	41,086	Bedford .....	35,144
Darlington .....	44,511	Lancaster .....	40,323	Macclesfield .....	34,624
Ashton - under - Lyne .....	43,800	Leigh .....	40,011	Maidstone .....	33,516
Dover .....	41,794	Cambridge .....	38,379	Tunbridge Wells .....	33,373
Keighley .....	41,564	Colchester .....	38,373	Peterborough .....	30,872
		Scarborough .....	38,161	Folkestone .....	30,650

Then there are the three towns of Chatham, Rochester, and Gillingham, practically one place, with 110,177 inhabitants, and the

five pottery towns, with a collective population of 147,273, which really ought to be added to Hanley, making a grand total of 208,872.

If we blend the three Kentish towns we find a total of 39,631 working males, of whom—

57·5 per cent. primary | 36·6 per cent. secondary | 5·9 per cent. indefinite

ranking, therefore, as much more industrial than Portsmouth or Plymouth. The principal primary occupations being—

	Per cent.		Per cent.		Per cent.
Military ....	20·3	Engineering, tools, &c.	10·6	Shipbuilding....	7·5

the cement makers and sailors ranking very low in comparison.

The six pottery towns in the aggregate contained 66,017 working males, of whom—

Per cent.		Per cent.		Per cent.
64·2 primary workers		33·1 secondary workers		2·7 indefinite workers

thus varying the Hanley average very little.

The principal primary industries in them were—

	Per cent.		Per cent.
Earthenware manufacture...	33·5	Iron manufacture .....	2·3
Coal mining .....	13·3	Brick, glass, &c. ....	2·2
Engineering, tools, &c. ....	5·2	Commercial clerks .....	2·1

Of the new places which have attained some importance, the chief industrial ones are (taking 3,000 men engaged in one industry as the standard)—

#### *Coal Miners.*

9,861	Aberdare	3,787	Ashington
8,775	Pottery towns (six)	3,684	Ebbw Vale
8,280	Mountain Ash	3,640	Tredegar
5,836	Abertillery	3,627	Brandon and Byshottles
5,801	Pontypridd	3,602	Stanley (Durham)
5,778	Ogmore and Garw	3,537	Ilkeston
5,271	Leigh	3,535	Barnsley
4,975	Hindley	3,463	Nantyglo and Blaina
4,449	Ashton-in-Makerfield	3,433	Ince-in-Makerfield
4,386	Cannock	3,245	Brownhills
4,269	Bedlingtonshire	3,081	Hucknall Torkard
4,039	Maesteg	3,065	Wombwell
3,873	Pemberton	3,040	Featherstone
3,804	Abersychan	3,008	Swinton and Pendlebury

#### *Cotton Manufacture.*

6,608	Nelson	3,299	Todmorden
4,698	Darwen	3,286	Ashton-under-Lyne
3,743	Colne	3,105	Chadderton

*Engineering, Tools, &c.*

4,612	Swindon	3,650	Darlington
4,570	Crewe	3,595	Accrington
4,270	Keighley	3,545	Rowley Regis
4,217	Chatham, Rochester, &c.	3,095	Wednesbury
3,740	Willenhall	3,034	Gorton

*Military.*

10,778	Aldershot	3,570	Sheerness
8,049	Chatham, Rochester, &c.	3,255	Cheriton
4,853	Portland	3,222	Colchester
3,984	Farnborough	3,117	Gosport

The rest are single instances, thus:—

Earthenware manufacture .....	22,101	in the six pottery towns
Boot making (excess).....	4,222	„ Kettering
Alkali and soap manufactures .....	3,228	„ Widnes
Shipbuilding .....	3,492	„ Jarrow

*Males Returned as Unemployed.*

Some fallacious inferences having been drawn from the numbers of male inhabitants returned as “without specified occupations” or unoccupied,” I take this opportunity of pointing out that these persons, though often possessed of means, are sometimes simply lunatics, imbeciles, or paupers. Calculating the ratio of such unoccupied persons to the number of working males, I find the highest proportions in the undermentioned urban districts:—

Urban District.	Unoccupied Males.		Notes.
	Num-ber.	Per Cent.	
Friern Barnet (Colney Hatch)	1,494	58.8	} Lunatic asylum : inmates..... {
Prestwich (Lancaster) .....	1,708	53.2	
Southall (Hanwell) .....	1,632	52.3	
Fareham .....	1,059	51.4	
Bodmin .....	689	51.0	
Caterham .....	1,414	50.1	} Imbecile asylum : inmates..... {
Broadstairs .....	706	48.9	
Grays Thurrock.....	1,813	44.5	} Convalescent homes : inmates..... {
Margate .....	2,367	43.4	
Fulwood (Lancaster) .....	676	42.0	} Training and industrial ships : inmates..... {
Sherborne .....	614	41.6	
Great Berkhamsted .....	562	41.6	} Sanatorium and industrial school : inmates..... {
Malvern .....	1,606	41.3	
			} Workhouse : inmates..... {
			Lunatic asylum : inmates..... {

The excess in Broadstairs, Margate, Sherborne, and Great Berkhamsted is not thus accounted for, but in the other nine instances I think it is really due to the cause suggested.

## POSTSCRIPT

(added to meet the suggestions made in the discussion).

In estimating the normal proportions of men engaged in certain "secondary" occupations, the excess above which should be referred to the account of the "primary" occupations, I have had regard in some measure to averages, but have always gone above them. For example, I have fixed the full ratio of railway *employés* in small towns required for local service at 2·6 per cent., being above the average 2·2 per cent. in 65 large towns. As respects tailors and bootmakers, each of which trades employ in large towns about 1 per cent. of working males, I have generally deducted for local service 1·34 per cent. for tailors and 1·26 per cent. for bootmakers. Where the secondary classes generally are very numerous, I should not treat 2 per cent. of either tailors or bootmakers as implying the existence of a primary industry. Any number of blacksmiths in excess of 1·3 per cent. I treat as being subsidiary to some primary industry, such as mining. These illustrations may suffice to show how I arrive at the numbers to be transferred.

Table II is intended to measure the degree of constancy in the proportions of certain divisions of the secondary classes in places of diverse characters. Treating the six columns of figures in that table as representing so many degrees of intensity, we may summarise its results as follows :—

	Degree					
	1.	2.	3.	4.	5.	6.
300 industrial places—						
Building .....	55	43	63	43	42	49
Conveyance .....	19	36	44	65	45	91
Food .....	42	30	61	80	62	25
Dress .....	11	23	64	93	85	24
290 other places—						
Building .....	253	16	13	6	—	2
Conveyance .....	190	61	25	5	5	4
Food .....	242	23	12	7	3	3
Dress .....	87	69	78	42	11	3

Bare inspection of these figures will show that the first two degrees comprehend a majority of the 290 ordinary and residential places (with suburbs and "mixed" towns), whilst they include a comparatively small proportion of the 300 industrial places. It is also seen that the 290 towns include many where the "dress" sub-

division does not rise above the third degree, the industrial places ranging still lower.

Taking the "dress" subdivision only, in greater detail, we have :—

	Degree					
	1.	2.	3.	4.	5.	6.
105 coal mining places .....	1	3	8	23	51	19
195 other industrial places .....	10	20	56	70	34	5
69 ordinary trading towns .....	40	23	6	—	—	—
107 suburban places .....	6	9	44	35	10	3

The conclusions I derive from the above figures are roughly these :—

(a.) That where none of these four subdivisions of the secondary classes exceed the third degree, the place is certainly industrial, and not a great seat of retail supply.

(b.) That where all except the "dress" subdivision reach or exceed the second degree, the place must be either trading, residential, or suburban.

(c.) That where the "dress" subdivision ranks low relatively to the other three subdivisions, the latter reaching the first or second degree, then the place is almost certainly suburban.

(d.) That in the rudest and most primitive places hardly any subdivision rises above the fourth degree.

(e.) That where one, and only one, of the subdivisions shows a ratio much beyond the minimum of the first degree, there is something unusual about the place which merits our consideration, but where all alike are on a high level, we need only conclude that the place is a remarkable seat of trade or of luxury.

Table III should be considered in connection with this matter, but it will be well to bear in mind that fourteen lines in it relate to single towns, and the effect of average in moderating any eccentricities in the figures is only experienced where the number of places is not less than 20.

## APPENDIX.

TABLE I (a).—Total Males Employed in Primary Industries in the smaller Urban Districts in 38 Counties in 1901.

<i>Commercial.</i>		<i>Other Manufactures, and Industries.</i>	
Merchants, agents, &c. ....	36,801	Brick, tile, cement, glass, } earthenware, china ..... }	59,161
Clerks .....	73,308	Oil, grease, &c. ....	6,765
Money dealers, insurance } agents, &c. ....	28,703	*Skins, leather, saddlery .....	8,946
Ship, boat building, &c. ....	28,866	Paper maker, stainer .....	5,517
Sailors, &c., on seas and } rivers .....	36,217	„ box, bag, &c., maker ....	1,151
In docks, harbours .....	12,286	Printer, lithographer .....	22,973
*Railway officials, &c. ....	40,886	Bookbinder .....	1,486
*Coal heaver, labourer .....	760	*Others connected with paper	468
*Inn, hotel keepers, bar- man, cellarman, &c. .... }	4,268	*Musical instruments .....	90
*Coffee house, lodging } house keeper .....	1,453	*Carriage, railway carriage, &c., builder.....	11,569
Others .....	167	*Cycle, motor manufacture	
	263,745	*Cabinet maker, &c. ....	2,752
		*Sawyer, &c. ....	1,322
<i>Metals, Tools, &amp;c.</i>		Explosives, matches .....	1,682
Iron, steel manufactures .....	37,706	Manufacturing chemist, &c.	12,757
Engineers—ironfounders .....	35,415	Brewer, distiller, maltster .....	12,049
„ *blacksmiths .....	4,330	*Worker in hair, feathers ....	270
„ erectors, fitters .....	49,146	*Ginger beer, chocolate, } and other food makers.... }	5,951
„ others .....	64,694	*Floorcloth manufacture .....	1,705
Tools .....	5,072	*Gas works service .....	1,023
Types, arms, miscellaneous } metal trades .....	48,891		157,687
*Watchmaker, goldsmith } *Instruments, fishing } tackle, &c. ....	18,033	<i>Mining.</i>	
Electrical apparatus .....	263,287	Coal and other miners .....	382,529
		<i>Agriculture, Fishing.</i>	
<i>Textile Manufactures,</i> <i>Dress, &amp;c.</i>		Gardeners, &c. ....	42,444
Cotton, flax manufacture .....	107,165	Others in agricultural class ....	98,138
Woollen, worsted manu- facture .....	44,681	*Grooms, trainers .....	1,056
Silk manufacture.....	6,498	Fishing .....	11,805
Hemp, &c., manufacture .....	3,442		152,943
Mixed or unspecified } materials .....	15,268	<i>Defence.</i>	
Bleaching, printing, dye- ing, &c. ....	25,383	Army .....	55,332
Textiles, not distinguished .....	825	Navy and marines.....	24,514
*Boot, shoe maker .....	21,373		79,846
*Tailor .....	1,123	<i>Other Primary Occupations.</i>	
*Hatter, glover, and others	6,731	*Factory labourer .....	1,547
*Straw hat, bonnet, plait } manufactures .....	3,329	Engine driver, &c., not defined	38,057
*Laundry service.....	508		39,604
	236,386	Total .....	1,576,027
		Or 52.1 per cent. on a total of 3,027,525 workers, of whom 2,681,581 were in- habitants of 590 specified towns.	

\* All occupations thus marked are such as only occasionally rise to importance, and an endeavour has been made to allocate to the primary classes no more than the special excess in particular places marking the existence of productive industries for markets other than local.

TABLE I (b).—*Total Males Employed in Secondary Industries in the Smaller Urban Districts, in 38 Counties, in 1901; with Ratios per 100 Working Males, and Similar Ratios for Larger Towns for Purposes of Comparison.*

	Males Employed.	Per 100 Working Males.	Comparative figures.		
			65 Large Towns.	Rhondda.	Hastings.
*Conveyance on railways .....	74,914	2.5	2.2	1.4	2.6
*" roads .....	106,903	3.5	5.5	1.0	6.6
*Messengers, porters, &c. ....	55,401	1.8	3.4	0.2	4.5
Building trades .....	301,757	10.0	9.9	3.0	14.6
*Food, workers in .....	28,689	0.9	1.0	0.3	1.6
" dealers in .....	139,539	4.6	4.6	2.8	9.2
*Inn, hotel keeper, cellar-man, &c. ....	31,575	1.0	1.4	0.4	1.2
*Coffee, eating house, lodging house keepers, &c. ....	7,313	0.2	0.3	0.1	0.4
*Tobacconist, &c. ....	2,918	0.1	0.3	—	0.3
*Tailor .....	28,573	0.9	1.1	0.6	1.4
*Boot, shoe maker .....	31,717	1.0	1.0	0.4	1.1
*Others working in dress .....	12,132	0.4	0.6	0.2	0.5
Dealers in dress, drapers, &c. ....	42,528	1.4	1.6	0.9	2.0
*Carriage builders, saddlers, &c. ....	27,332	0.9	1.0	0.4	1.1
Chemist, oil dealer .....	10,328	0.3	0.5	0.1	0.7
*Upholsterer, cabinet maker, &c. ....	22,553	0.7	1.3	0.1	1.1
*Workers, dealers in precious metals, &c. ....	9,315	0.3	0.6	0.1	0.9
*Workers, dealers in wood and bark, and dealers in furniture .....	26,868	0.9	1.1	0.2	1.1
*Blacksmiths .....	37,334	1.2	1.0	1.1	0.7
*Sundry dealers, &c. ....	36,017	1.2	1.5	0.3	1.3
Road labourers and others .....	27,491	0.9	0.8	0.2	1.5
*Gas, water, electric and sanitary services .....	19,926	0.7	0.9	0.2	1.3
Domestics, indoor .....	13,341	0.4	0.6	—	1.1
" outdoor .....	45,331	1.5	0.6	0.1	2.2
*Laundrymen and others engaged in domestic services .....	13,999	0.5	0.8	0.1	1.3
Law, medicine, divinity .....	43,353	1.4	1.4	0.6	3.4
Education, literature, art .....	52,516	1.7	2.0	0.9	3.9
Government .....	45,370	1.5	2.1	0.4	2.7
Indefinite secondary occupations .....	21,009	0.7	1.1	0.3	1.9
Total .....	1,316,042	43.5	50.2	16.4	72.7

\* Less certain numbers transferred to the primary classes.

TABLE II (a).—Percentages of Building Class\* in 59 Large and 590 Small Towns.

	Percentage on Working Males.					
	10 and Over.	8·5 to 9·9.	7·0 to 8·4.	6·0 to 6·9.	5·0 to 5·9.	Under 5·0.
<b>Large towns—</b>						
17 commercial .....	15	1	1	—	—	—
15 textile manufactures .....	5	8	2	—	—	—
19 metal manufactures .....	7	9	3	—	—	—
5 other manufactures .....	2	—	3	—	—	—
3 mining .....	—	—	1	1	—	1
<b>Total 59 towns† .....</b>	<b>29</b>	<b>18</b>	<b>10</b>	<b>1</b>	<b>—</b>	<b>1</b>
<b>105 coal mining districts—</b>						
63 urban districts with highest primary ratios .....	—	1	1	6	16	39
42 urban districts with lower primary ratios .....	5	6	19	4	8	—
11 coal mining and cotton or woollen manufactures .....	—	2	2	4	2	1
12 iron, tin, and slate mining and quarrying .....	3	—	2	3	2	2
11 pottery, brick, cement, glass, &c., manufacturing .....	2	2	2	5	—	—
14 agricultural, fishing, and horse training .....	6	4	2	—	—	2
8 iron manufacturing .....	2	—	2	2	1	1
29 engineering, machine, tool manufacturing .....	7	4	5	7	5	1
8 textile manufactures and engineering .....	—	4	3	—	1	—
37 cotton manufacturing .....	4	6	15	7	3	2
20 woollen manufacturing .....	7	7	5	1	—	—
16 other textile manufactures and dress manufactures .....	5	5	3	2	1	—
5 other manufactures .....	1	—	3	1	—	—
13 commercial and railway towns .....	8	2	2	—	1	—
11 military places .....	5	—	2	1	2	1
<b>300 .....</b>	<b>55</b>	<b>43</b>	<b>68</b>	<b>43</b>	<b>42</b>	<b>49</b>
<b>69 ordinary trading towns .....</b>	<b>67</b>	<b>1</b>	<b>1</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>39 residential places .....</b>	<b>39</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>75 mixed towns .....</b>	<b>65</b>	<b>6</b>	<b>3</b>	<b>—</b>	<b>—</b>	<b>1</b>
<b>55 provincial suburbs, &amp;c. ....</b>	<b>31</b>	<b>8</b>	<b>9</b>	<b>6</b>	<b>—</b>	<b>1</b>
<b>52 metropolitan suburbs, &amp;c. ....</b>	<b>51</b>	<b>1</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>290 .....</b>	<b>253</b>	<b>16</b>	<b>13</b>	<b>6</b>	<b>—</b>	<b>2</b>

\* This is the class as defined in the Census Returns.

† Excluding 3 military and 5 pleasure places, all showing ratios above 10 per cent.



TABLE II (b).—Percentages of Conveyance (Road, Rail, &amp;c.), Messages, &amp;c., Class\* in 59 Large and 590 Small Towns.

	Percentage on Working Males.					
	10 and Over.	8·5 to 9·9.	7·0 to 8·4.	6·0 to 6·9.	5·0 to 5·9.	Under 5·9.
Large towns—						
17 commercial .....	7	5	4	1	—	—
15 textile manufactures ...	2	5	6	1	1	—
19 metal manufactures.....	3	8	3	4	1	—
5 other manufactures .....	—	1	3	1	—	—
3 mining .....	—	—	1	—	1	1
Total 59 towns† .....	12	19	17	7	3	1
105 coal mining districts—						
63 with highest primary ratios .....	—	—	—	5	7	51
42 with lower primary ratios .....	3	7	5	10	9	8
11 coal mining and cotton or woollen manufactures ...	—	2	1	2	1	5
12 Iron, tin, and slate mining and quarrying .....	—	—	1	3	3	5
11 pottery, brick, cement, glass, &c., manufactures .....	2	5	—	3	1	—
14 agricultural, fishing, and horse training .....	4	4	3	2	1	—
8 iron manufacturing .....	2	2	2	1	1	—
29 engineering, machine, tool making .....	—	5	11	9	3	1
8 textile manufactures and engineering .....	—	3	—	4	1	—
37 cotton manufacturing .....	3	1	4	10	10	9
20 woollen manufacturing.....	—	1	3	9	4	3
16 other textile manufactures and dress manufactures }	2	1	5	4	1	3
5 other manufacture .....	—	1	—	2	1	1
13 commercial and railway towns	2	2	8	1	—	—
11 military places .....	1	2	1	—	2	5
300 .....	19	36	44	65	45	91
69 ordinary trading towns.....	56	9	3	1	—	—
39 residential places .....	37	1	1	—	—	—
75 mixed towns .....	36	23	13	—	3	—
55 provincial suburbs, &c.....	25	16	6	3	2	3
52 metropolitan suburbs .....	36	12	2	1	—	1
290 .....	190	61	25	5	5	4

\* This is the class as shown in the census returns, less transfers to primary occupations.

† Excluding 3 military and 5 pleasure towns, the former showing moderate ratios, the latter ranging from 12·2 per cent. upwards.

TABLE II (c).—Percentages of Food, Drink, &amp;c., Suppliers Class\* in 59 Large and 590 Small Towns.

	Percentage on Working Males.					
	7·5 and Up-wards.	6·5 to 7·4.	5·5 to 6·4.	4·5 to 5·4.	3·5 to 4·4.	Under 3·5.
Large towns—						
17 commercial .....	8	6	2	1	—	—
15 textile manufactures .....	3	6	5	1	—	—
19 metal manufactures .....	2	6	7	3	1	—
5 other manufactures.....	1	—	2	2	—	—
3 mining .....	—	1	—	—	2	—
Total 59 towns† .....	14	19	16	7	3	—
105 coal mining districts—						
63 with highest primary ratios .....	—	—	1	17	30	15
42 with lower primary ratios .....	5	5	10	11	8	3
11 coal mining and cotton or woollen manufactures .....	1	1	3	6	—	—
12 iron, tin, slate mining and quarrying .....	1	1	1	5	3	1
11 pottery, brick, cement, glass, &c., manufactures .....	1	3	5	1	1	—
14 agricultural, fishing, and horse training .....	9	3	—	1	1	—
8 iron manufacturing .....	—	—	4	3	1	—
29 engineering, machine tool making .....	3	4	7	7	6	2
8 textile manufactures and engineering .....	1	3	1	2	1	—
37 cotton manufacturing .....	1	3	12	14	7	—
20 woollen manufacturing .....	4	1	7	6	2	—
16 other textile manufactures and dress manufactures .....	6	3	4	2	1	—
5 other manufactures .....	1	1	—	2	—	1
13 commercial and railway towns .....	6	2	3	2	—	—
11 military places .....	3	—	3	1	1	3
300 .....	42	30	61	80	62	25
69 ordinary trading towns .....	69	—	—	—	—	—
39 residential places .....	39	—	—	—	—	—
75 mixed towns .....	61	10	3	—	1	—
55 provincial suburbs, &c.....	24	11	9	6	2	3
52 metropolitan suburbs, &c. ....	49	2	—	1	—	—
190 .....	242	23	12	7	3	3

\* This is the class as shown in the census returns, less transfers to primary occupations.

† Excluding 3 military and 5 pleasure towns, 6 showing ratios at and above 9·2 per cent.

TABLE II (d).—Percentages of Dress\* Providing Class in 59 Large and in 590 Small Towns.

	Percentage on Working Males.					
	4·5 and Over.	3·5 to 4·4.	2·5 to 3·4.	1·7 to 2·4.	1·0 to 1·6.	Under 1·0.
<b>Large towns—</b>						
17 commercial .....	—	6	8	3	—	—
15 textile manufactures .....	—	4	10	1	—	—
19 metal „ .....	—	7	6	5	1	—
5 other „ .....	—	1	1	2	1	—
3 mining .....	—	—	1	1	1	—
<b>Total 59† towns .....</b>	—	18	26	12	3	—
<b>105 coal mining districts—</b>						
63 with highest primary ratios .....	—	—	1	6	39	17
42 with lowest primary ratios .....	1	3	7	17	12	2
11 coal mining and cotton or woollen manufactures .....	—	1	1	8	1	—
12 iron, tin, and slate mining and quarrying .....	2	1	2	6	1	—
11 pottery, brick, cement, and glass, &c., making .....	—	—	1	8	2	—
14 agricultural, fishing, and horse training .....	—	7	2	3	1	1
8 iron manufacturing .....	—	—	2	5	—	1
29 engineering, machine, tool making .....	—	1	9	6	12	1
8 textile manufactures and engineering .....	—	1	4	2	1	—
37 cotton manufacturing .....	1	—	11	17	8	—
20 woollen „ .....	2	—	12	6	—	—
16 other textile manufactures and dress manufactures .....	2	8	3	3	—	—
5 other manufactures .....	—	—	1	1	2	1
13 commercial and railway towns .....	1	1	6	4	1	—
11 military places .....	2	—	2	1	5	1
<b>300 .....</b>	11	23	64	93	85	24
<b>590 Small towns—</b>						
69 ordinary trading towns .....	40	23	6	—	—	—
39 residential places .....	13	15	10	1	—	—
75 mixed towns .....	23	22	18	6	1	—
55 provincial suburbs, &c. ....	4	7	16	18	7	3
52 metropolitan suburbs, &c. ....	2	2	28	17	3	—
<b>290 .....</b>	87	69	78	42	11	3

\* This is the class as shown in the census returns, less transfers to primary classes. It does not include drapers and other dealers in textile fabrics.

† Excluding 3 military and 5 pleasure towns, the ratios in the latter averaging 4·4 per cent.

TABLE III.—Showing the Proportions of Certain Secondary Classes in the 590 Small Towns.

Group of Towns.	Number of Districts.	Per Cent. Employed.			
		Building.	Con-veyance.	Food.	Dress.
Coal mining .....	105	6.2	5.3	4.7	1.7
Coal mining and cotton manufactures } .....	7	6.4	5.6	5.8	2.0
Coal mining and wool, &c., manufactures } .....	4	7.6	6.5	6.0	3.1
Tin mining .....	3	10.5	5.1	6.5	4.1
Iron mining .....	8	7.0	5.8	4.6	2.1
Slate quarrying .....	1	5.1	3.6	5.9	4.0
Salt making .....	1	11.5	10.1	6.1	2.3
Pottery .....	5	8.1	7.2	5.4	1.8
Cement .....	1	8.0	10.3	6.8	1.2
Iron manufactures .....	8	7.0	7.8	5.2	2.0
Engineering .....	27	8.4	7.1	5.6	2.1
Engineering and railway .....	1	10.6	5.5	4.5	2.3
Engineering and shipbuilding .....	1	6.1	7.8	5.4	1.8
Cotton manufactures .....	37	7.7	5.0	5.5	2.3
Cotton manufactures and engineering } .....	5	7.8	7.4	6.1	2.7
Textile manufactures and engineering } .....	3	8.6	7.2	6.6	2.6
Lace making .....	1	7.9	7.2	4.6	1.8
Hosiery making .....	1	9.2	4.6	6.8	3.6
Hat making .....	2	6.0	7.8	5.3	1.7
Woolen manufactures .....	20	9.3	6.3	6.2	2.9
Boot making .....	7	8.7	6.8	6.4	3.4
Watch making .....	1	8.0	4.2	6.5	1.9
Alkali making .....	1	7.7	9.8	4.8	1.6
Ship building .....	2	7.2	6.3	3.9	1.1
Military .....	11	8.6	6.5	5.9	2.4
	263				
Brick making .....	3	7.4	7.9	7.6	2.1
Glass making .....	1	6.4	9.7	7.0	2.2
Fishing .....	4	11.8	10.3	10.4	3.1
Agricultural .....	9	9.2	8.6	8.1	2.8
Horse training .....	1	14.8	8.8	7.6	3.9
Carpet making .....	1	9.2	7.0	9.2	3.7
Straw hat making .....	1	12.2	8.2	9.4	5.0
Silk manufactures .....	3	10.4	7.7	8.7	4.4
Wood furniture manufactures .....	1	11.4	6.5	8.3	2.6
Commercial .....	11	10.0	8.8	7.4	2.6
Railway service .....	2	12.5	8.0	7.6	3.3
	37				
Ordinary trading .....	69	15.5	11.2	10.3	4.8
Watering places .....	39	19.6	11.8	12.6	4.2
Suburbs, { Industrial .....	35	9.8	8.3	6.1	2.3
{ Other .....	20	13.1	10.7	8.7	3.2
Suburbs, { Industrial .....	8	14.3	10.1	7.6	1.9
{ Other .....	44	16.4	11.5	9.8	2.9
Mixed towns .....	75	12.5	9.7	8.7	3.9

TABLE IV.—Population, Area, and Rate of Increase in Population of 590 of the Smaller Urban Districts.

Group of Towns.	Acres.	Population.		Increase per Cent.
		1891.	1901.	
105 coal mining districts .....	491,610	1,163,141	1,446,734	24·4
7 coal mining and cotton manufactures .....	19,566	109,634	128,543	17·2
4 coal mining and woollen manufactures .....	8,505	37,167	39,546	6·4
8 iron mining .....	49,715	67,432	68,061	0·9
3 tin mining .....	18,570	31,143	30,823	1·0*
1 slate quarrying .....	893	5,799	5,281	8·9*
1 salt making .....	5,730	10,440	10,382	0·6*
3 brick making .....	26,214	29,218	31,895	9·2
5 pottery making .....	8,278	124,463	147,273	18·3
1 glass making .....	1,434	5,425	5,809	7·1
1 cement making .....	3,934	11,717	12,908	10·1
4 fishing .....	13,122	43,396	50,973	17·5
9 agricultural .....	94,402	62,392	67,873	8·8
1 horse training .....	5,649	8,631	10,688	23·8
8 iron manufacturing .....	13,748	75,001	85,414	13·9
29 engineering, machine, tool making .....	65,292	512,643	588,925	14·9
8 textile manufactures and engineering .....	18,402	196,575	214,223	9·0
37 cotton manufacturing .....	156,311	511,544	560,812	9·6
20 woollen manufacturing .....	71,368	226,252	231,596	2·4
16 other textile manufactures and dress manufacturing .....	43,558	233,299	263,921	14·4
5 other manufactures .....	6,118	100,511	107,173	6·6
13 commercial and railway towns .....	22,722	147,809	186,739	26·3
11 military places .....	33,129	159,613	200,383	25·5
300 .....	1,183,370	3,873,245	4,498,973	16·2
69 ordinary trading towns .....	186,216	725,022	793,092	9·4
75 mixed towns .....	202,658	873,718	960,860	10·0
	388,874	1,598,740	1,753,952	—
39 residential places .....	119,741	517,450	664,947	28·5
55 provincial suburbs, &c. ....	114,979	565,525	769,301	36·0
52 metropolitan suburbs, &c. ....	189,593	686,271	952,813	33·8
	424,313	1,769,246	2,387,061	—
Grand total .....	1,996,557	7,241,231	8,639,986	19·3

\* Decrease per cent.

DISCUSSION *on* MR. T. A. WELTON'S PAPER.

MR. NOEL A. HUMPHREYS fully appreciated the labour Mr. Welton had devoted to this paper, and he was glad to see that the additional information given in the report on the recent census had met with his approval. It was to be regretted that as regards the occupations in small towns there was no means of comparison with previous censuses, as such a comparison would have added immensely to the value of the paper. Mr. Welton would excuse him for being somewhat sceptical as to the distinct advantage to be derived from his somewhat arbitrary division of occupations into primary and secondary; he hardly recognised the object of that division. Secondary occupations might, as the author suggested, afford some indication of social condition, though the omission of females, who, as domestic servants, formed the most numerous class of those engaged in secondary occupations, rather detracted from the value of any such conclusion. There were some points which were suggestive, but the paper seemed carefully to avoid the formation of definite conclusions. One great feature of recent occupational statistics, especially in the smaller towns, was the decay of village industries. Attention had been called in the paper to the great growth of bootmaking in certain parts of England, such as Kettering, Northampton, Leicester, Norwich, and one or two other places, but the number of people engaged in bootmaking in the whole country had in fact very much declined, and in the villages the industry was almost dying out. There the people were only distributors of machine-made boots; and there were several other occupations such as saddlers, blacksmiths, and tailors, which, considered as village occupations, showed a decline. The decrease in the number of tailors in the country was enormous, although they aggregated in places where there were manufactures of ready-made goods. Another decaying occupation was that of the small tradesman, who was being crowded out. That was a question he should like to see very thoroughly investigated. Succeeding censuses showed clearly enough that this decline of village industries was progressive, and this decline was probably one of the causes of the migration from the rural districts to towns, accentuating urban overcrowding, and probable physical deterioration. That was a point which he thought might well be dealt with in a subsequent paper, and he did not know of anybody who was better fitted by knowledge and interest in census matters to deal with it than the reader of the present paper.

MR. A. H. BAILEY remarked that primary workers were shown to be 84·8 per cent., and secondary workers 13·1 per cent., together 97·9 per cent., and asked what became of the remaining 2·1 per cent. It would make the matter a little more clear to be able to make the figures up to 100.

MR. T. A. WELTON, in reply to Mr. Bailey, said that the figures making up 100 per cent. included general labourers and other

people who were not definitely employed in such a way as to be capable of separation under primary and secondary headings. He had mentioned early in the paper some 135,000 as employed, "but returned in such an indefinite manner that they cannot be classified;" and those were the people in question.

Mr. J. A. BAINES agreed with Mr. Humphreys in appreciating the immense amount of labour which had been devoted to this paper, and the great use of the details given as regarded individual towns. He had often in that room criticised the mode in which the average householder filled up the occupation column in his census paper, and, though he rather gathered from the author's remarks that Mr. Welton did not agree with his aspersions, he felt that the answer given to Mr. Bailey's question greatly supported his view. Here they had the uneducated householder returning himself in 135,000 cases out of a million and a half in such a manner that his return had to be redistributed by arbitrary calculations over the rest of the return. He thought, therefore, he was justified in saying that the return of occupations, except in respect of certain broad classes, was not sufficiently accurate to be proportionate to the enormous amount of labour required in compiling in such great detail the 360 or more groups to which they were accustomed in the general census report. He would express his regret that the author had not summarised his conclusions either by town-groups or in some broad general description, in order that they might judge how far that regularity of which Mr. Welton spoke in the beginning of his paper appeared in the detail, and was justified by the proportionate distribution of different classes of occupation. He confessed that he had not been able to see clearly what those conclusions really were, that was to say what, in the phrase of Bacon, was the harvest of this calculation. He agreed again with Mr. Humphreys that the omission of the females was rather a drawback to a correct appreciation of the position of the towns. It was not only a question of domestic servants, but of the very varying degrees in which women shared in family work in the shopkeeping and minor industries according to the locality and size of town. Considering the whole population of the towns, the number of individuals dealt with was comparatively small, and the inclusion of women might therefore alter the proportions of occupation. On the question of the effect of the military on a town's commerce, he would remind Mr. Welton that when a regiment was ordered away from a place, there was a general outcry until another regiment was sent, on the score of injury to trade, and that even where the military resorted, according to tradition, the female element was not altogether to be discounted. He would like to ask Mr. Welton a question as to what he called the "excess ratio." He had put down as excess sometimes absolute figures, sometimes ratios. This was assumed to be the excess over the normal or standard, but whether that basis was the general average throughout the kingdom, or on the average of each group of towns, was not clear to him. There might be an excessive number of agriculturists over the normal, but

it should be shown what that normal was in the special group of towns, and how far it differed from the corresponding figure for other groups. In regard to the process of extinction of village industries to which Mr. Humphreys had referred, was it entirely beyond hope or probability that the house to house distribution of power which had been successfully carried out in some districts on the continent, might arrest the decline, as gas or electricity grew cheaper and more available? As to the subdivisions of the unemployed, he was inclined to think that in many cases at the present time, paupers, lunatics, and prisoners might well be included amongst those "living in luxury." In conclusion, he reiterated his hope that in revising the paper for publication, Mr. Welton would see his way to a paragraph of general conclusions, by group or otherwise.

Mr. R. HENRY REW said he was not prepared to discuss the paper, but would ask a question with regard to the figures showing the proportion of agriculturists. He noticed that the category of "ordinary trading towns" included places which scarcely seemed to come within that definition. For example, March, in Cambridgeshire, had an area of nearly 20,000 acres, and it seemed rather curious that places of that description should be termed "ordinary trading towns." No doubt the boundaries of urban districts were drawn with considerable elasticity, and presumably in that particular place the urban district comprised a very considerable extent of agricultural land. According to the tables, the area comprised 32.4 per cent. agriculturists and 20.1 per cent. railway servants. A similar remark might apply to Ely, which comprised a large area, 16,732 acres, with an agricultural population of 31 per cent. The table in which those figures appeared was stated to refer to "ordinary trading towns which showed over 20 per cent. of agriculturists," but that was not the case with all in the list, the inhabitants of several of the towns towards the bottom of the table being mainly engaged in the fishing industry. In another table on p. 19, again, under the heading of "ordinary trading towns," there was a list of those which showed 10 per cent. or more of agriculturists. Did this mean that the table on p. 19 included places where there were between 10 per cent. and 20 per cent. of agriculturists, and that on p. 10 were included places with over 20 per cent. of agriculturists? The fact that so much labour had been put into those tables, and that Mr. Welton had given them the bare tables with so few comments upon them, made it difficult, without careful study, to find a peg on which to hang criticism.

The PRESIDENT, in proposing a vote of thanks to Mr. Welton, and speaking not as a census authority like two of those who had addressed them but as an outside observer, said still he felt—what he had often expressed at their meetings—a great hesitation in drawing very confident conclusions from the occupation tables of their own or any other census. The more one looked at the method by which the classification was arrived at, and the more one examined the non-coincidence of the spheres of particular industries with the areas—and above all the small areas—in which the figures



were necessarily grouped, the more one appreciated the risk of fallacies inseparable from the use of bare figures of "occupations" enumerated in areas of "residence." That was neither the fault of the statistician who was preparing the census data nor of the inquirer who was collating the facts, as Mr. Welton had done with so much labour and assiduity. It lay to a considerable extent with our irregular and confusing units of local areas and local government. Places of residence and localities of work varied and interlaced at many points, and the men employed in one industry lived perhaps in geographical areas where no such calling was practised. The homes of commercial clerks were distributed quite away from the urban places where their work was done. Similar conditions must to a great extent explain the cases quoted, where an unexpected number of agriculturists lived in, but were nevertheless employed wholly outside, those small towns mentioned in the paper. The classification of primary and secondary industries was, of course, somewhat arbitrary, and there might be room for some little discussion as to whether Mr. Welton had included in all cases what would be generally agreed as primary industries in his tables; but the whole subject put before them that day was eminently suggestive. It was from that point of view, he thought, that the Society welcomed a paper of this kind; it put before them certain tentative suggestions which would at least afford scope for further study. Recognising as they did the insuperable character of some of the natural difficulties which attended the compilation of a census of occupations, results like those of this paper might also afford suggestions to their Census Committee or to others who might now be turning their thoughts to the consideration of the lines of a future census, as to the directions in which it might be possible to amend existing methods. While speaking of census matters, he might say that he had recently received from the United States of America official documents which showed the new constitution of the permanent census office which that Government had now established in connection with their Ministry of Commerce and Labor. From this new departure lessons might perhaps be learned in this country. A reform which the Statistical Society had often pressed upon the Government of the day, was the absolute necessity for continuous work of a trained staff devoted to the elaboration of census problems in a central office between census and census. Such a staff would help to elucidate some of the very difficulties as they had come across in trying to debate this paper. He thought the example of America in this respect was one on which they would do well to ponder.

Mr. WELTON, in reply, expressed his belief that errors in the returns which were of a general character and probably not highly important in themselves, did not prevent a very fair comparison being made between place and place. He had endeavoured in the case of the colliery towns to show that, if taken in batches, according to their devotion to one industry or the other, there was something like a regular progression of greater numbers engaged in

secondary industries the more they approximated to ordinary towns, and that the larger elements of the secondary classes did group together in such a proportionate way as to give, to himself at least, some confidence in the truthfulness of the basis on which these figures rested, though he quite agreed that there was an unknown percentage of error embodied in them. He agreed with Mr. Humphreys's remark that the females ought to be taken into account in order to make a complete *exposé* of the social conditions of the towns. But the discussion of this matter had been rendered impossible by limitations of space.

In reply to Mr. Rew, he explained that the places on p. 10 were largely agricultural districts, and were selected and placed among the industrial places as being not so much "ordinary trading towns" as industrial in the agricultural sense. The places on p. 19 were sufficiently trading towns, and not so much employed in the way of agriculture as to prevent their being classed with the ordinary run of trading towns. On referring to the industrial list, it would appear that the nine agricultural towns were reckoned as industrial and not as "ordinary trading towns." So far as they were towns they were probably of the ordinary sort, but some of the districts were almost devoid of towns. North Bromsgrove, for example, had not a place worth calling a town within its area. As regarded social condition, again, he might say, from a very close attention of very many years to the subject, that the proportion of male secondary workers was a very valuable test of the character of a district, and that without reference to the female element one could tell the character of a place sufficiently well by the proportion of male secondary workers. There was no doubt as to the cause of the decay of villages, and as to the redistribution of bootmakers, tailors, and the like, it had been brought about by the introduction of the sewing machine and by the action of capital in proceeding to manufacture such things as boots and clothes on a wholesale scale. With the census published in its present form he did not know that they could do much in the way of tracing the decline of industries in villages. If previous censuses had given all the details which were now afforded, they would have been able to make the most interesting comparisons ranging over a period of about fifty years. To a certain extent things of that kind could be traced in the paper he had presented to the Manchester Society (which was to be found in the library), on the comparison of occupations as between 1851 and 1891, and a good deal was to be discerned there with regard to the transition of an industry from one shape to another. He did not know how they were to measure the dying away of the small tradesman. It would be a difficult matter to distinguish between the *employés* of the large tradesmen and masters of the small order. He did not think that the distinction between master and man had been successfully shown in the census returns at any time. With respect to indeterminate general labourers and so on, there was a certain number of loose fish in every community, who would do work upon the roads, or would paint, or would do quite a number of little things which did not require

much intelligence. Those people, to a great extent, formed this class of general labourers, a class which, in the last census, had very much diminished. A number of those formerly returned as general labourers had been put into the building class, and that had reduced the indefinite order to about half its former dimensions. He had deliberately avoided drawing conclusions and endeavouring to establish a set of propositions that they could argue upon. His object had been to give to every man the means of arriving, with much greater ease than he himself could, at an idea of what was normal, and at a conception of the variations existing between different orders of towns. He thought it would not be wise to go further and lay down absolute propositions which he did not himself believe. For instance, the proportion of secondaries in a particular place might result from the high degree of luxury in a place, or it might result from a place having the trade of a considerable surrounding circle of rural districts, the inhabitants of which districts came there to market, but that sort of thing had diminished a good deal in these days, because centres were far more wide apart than they used to be. One town, for its own purposes and on its own account (like Brighton) and other places which formed centres of supply, and were likely to draw their customers from twenty miles round, would equally have a large number of secondary workers. As regarded the surplus numbers, he had not attempted to deal with any case arbitrarily. For instance, a small proportion of bootmakers was to be expected everywhere, and he had adopted a figure sufficiently large to express fully the normal, and, perhaps, a little above the average, and he had deducted that wherever he had found a great mass of bootmakers who evidently did not supply the immediate places they lived in. He had been anxious, as far as possible, to make the people he could call the surplus over persons engaged in the local supply, rather less than more than the right number. The case of railway servants was a very leading instance. There he had taken 2.6 per cent. as the normal ratio, though in a great many places less than that would be absolutely sufficient for the ordinary purposes of railway work. He thought one might safely say that the excess shown was always due to some special condition of things, such as railway works or railway central offices, and a place which showed an excessive number might fairly be called a railway town. It was for these reasons that he had avoided placing before them abstract propositions. They would all be able to arrive at a sound notion of the normal by studying these tables for themselves. He had formerly endeavoured to obtain an arena to discuss fully and absolutely the treatment of the two classes, primary and secondary. Whatever he had put forward had been either disregarded or accepted—he did not know which—and having tried in vain to get a discussion on the subject, he had ended in following his own course, which he hoped had produced results which, although they might not be perfect, were at least suggestive and useful.

TRADE UNION EXPENDITURE *on* UNEMPLOYED BENEFIT.

By E. L. HARTLEY, B.A.

[Read before the Royal Statistical Society, 16th February, 1904.

MAJOR PATRICK GEORGE CRAIGIE, C.B., President, in the Chair.]

THE question of fluctuations in employment has been dealt with in the *Journal of the Royal Statistical Society* twice during recent years. In a remarkable paper read before the Society in December, 1899, Mr. Wood examined the progress made by the working classes since 1860. The line of inquiry which he followed was to trace year by year the changes in money wages, in the percentage of unemployed as shown in the records of the more important trade unions, and in the consumption of the important raw materials of food and clothing by all the inhabitants of the United Kingdom. In the diagram he added two more tests by introducing curves based upon the marriage-rate and upon pauperism. The point in Mr. Wood's paper, which I particularly wish to emphasise, is that the diagram shows that whether the prosperity of the working classes is tested by the change in money wages, or by the lack of employment, or by the power of consumption, or by the marriage-rate, or by pauperism, a wonderful similarity of result is obtained. Each test gives fluctuations in the prosperity of the people from year to year, and in each case the fluctuations are practically identical in character and simultaneous in time. I refer to this point, as it is my intention to deal in some detail with only one of the tests used by Mr. Wood, namely, fluctuations of employment, and I wish it to be borne in mind that if material were available for making similar investigations through the medium of the other tests, similar results might be expected.

In the discussion following upon Mr. Wood's paper, Mr. George Howell suggested that fluctuations of employment could be more accurately measured by the amount of money expended by the trade unions on unemployed benefit than by the number of unemployed given in the trade union returns. I had prepared, some two years previously, diagrams based upon "unemployed benefit" for many trades, and was in a position to state that the result of the examination suggested by Mr. Howell would confirm the accuracy of the result obtained by Mr. Wood from the other method. In March, 1900, Mr. Wood contributed to the *Journal* a paper dealing exhaustively

with this point, and proved that the curves of unemployment, whether based upon the percentages of the trade union members unemployed or upon the amount of money expended on unemployed benefit, were practically identical in the character and time of their fluctuations.

I propose in the present paper to push the investigation of the statistics relating to the unemployed benefit a little further, by examining the figures relating to different industries, or groups of industries, in order to see if they throw any light upon the relations of one industry or group of industries to another, and to what extent different industries are affected by movements common to all or peculiar to themselves.

The material available consists of the records kept by the various trade unions, some of them over long periods of time. These were collected and tabulated up to 1895, and published in the "Eighth Report on Trade Unions," C-8232. The figures for the more important unions were continued year by year in the reports on trade unions up to 1900, since which year they have unfortunately been discontinued. It is noticeable that in some of the later reports the figures for previous years have been revised. The figures in this paper, except where specially mentioned, are all based upon figures taken from these reports.

The reports adopt the form of "cost per member" of unemployed benefit, and the "cost per member" for any particular year is obtained by dividing the total sum expended by the society in unemployed benefit during that year by the total number of members at the end of the year. In using the figures this must be kept in mind. In several of the unions many of the members do not subscribe to the unemployed benefit; and, further, during certain periods there have been considerable fluctuations in the number of members; so that the number of members at the end of the year may differ considerably from the average number for the year. A more correct method of measuring the "cost per member" would be to divide the total expenditure by the average number of members during the year who subscribe to or participate in the unemployed benefit. Some of the trade unions adopt this method in their annual reports; if all the chief unions could be induced to do this, and the returns were collected and tabulated by the Labour Department in this form, a very valuable record would thus be obtained of the vicissitudes of the people employed in the main industries of the country. In dealing with the average "cost per member" of unemployed benefit of a considerable number of trade unions, the error due to the method of calculation adopted by the Board of Trade does not vitiate the general results, as is conclusively proved by Mr. Wood's

paper of March, 1900, but in dealing with the figures of any individual society special regard must be paid to these possible sources of error.

Another point to which attention should be directed is the nature of unemployed benefit and the different rules and conditions under which it is administered. Not only do these vary in the different societies, but the same society occasionally changes the scale of its benefits. It follows that these figures must not be used to compare the absolute amount of unemployment in one society with the amount in another, or even to compare the absolute amount in the same society over long periods of time, unless a proper correction is made for the changes in scale. Moreover, as a general rule the out-of-work pay is only continued for a stipulated number of weeks, and if the member is out of work for a longer period he receives no more "unemployed benefit," and so ceases to leave his record on the figures. Hence in periods of prolonged depression, such as 1879, though the figures of unemployed benefit keep a faithful record of the time when the depression begins to be felt in each industry, they minimise the extent of the suffering involved, and tend to show a recovery from the depression rather sooner than the actual recovery takes place.

The scales of the benefits of the different societies vary from a small allowance for travelling expenses while the member is in search of work, commonly called "tramp pay," to an allowance of 12s. per week, with a further small allowance for each child. To facilitate a comparison between the fluctuations in the expenditure of the different societies on such different scales of benefit, it is necessary to reduce the records to a common base. In doing this I have followed the method used by Mr. Wood, and for convenience the same period has been adopted as base; this is the average of the yearly "cost per member" during the ten years 1882-91. Table I shows the percentage which the cost per member of the selected societies for each year bears to the average cost per member during the period 1882-91. In some cases individual figures do not correspond with those given in Mr. Wood's table, but generally this is due to the alterations made in the official returns which have been published since that paper was written.

TABLE I.—Showing Variations in the Expenditure by certain Trade Unions on Unemployed Benefit, and in the Total Imports and Total Exports of British Produce (excluding Ships), reduced to Percentages of 1882-91.

Union.	Number of Members in 1900.	Average of Cost per Member of Unemployed Benefit during Years 1882-91.	Percentage of each Year to Average of 1882-91.								
			1880	'61.	'62.	'63.	'64.	'65.	'66.	'67.	
<i>Coal.</i>			£	s.	d.						
Northumberland Miners .....	23,950	- 3 1	—	—	—	—	—	—	15	—	—
Durham Colliery Enginemn .....	2,062	- 4 5	—	—	—	—	—	—	—	—	—
<i>Metals.</i>											
Iron Founders .....	18,357	1 6 3	38	112	179	127	72	59	102	249	
Amalgamated Engineers .....	87,672	- 19 9	37	89	162	176	56	45	170	175	
Steam Engine Makers .....	8,495	- 12 4	50	50	142	208	81	41	41	78	
Boiler Makers and Iron and Steel Ship Builders .....	47,670	- 14 5½	—	—	—	—	—	—	—	240	
<i>Textiles.</i>											
Amalgamated Cotton Spinners .....	18,384	1 - 2	—	—	—	—	—	—	—	—	—
Blackburn Beamers, Twist-ers and Drawers .....	661	- 7 6½	—	—	—	—	—	—	—	—	—
Blackburn Weavers .....	12,500	- 4 9½	—	—	—	—	—	—	—	—	—
Amalgamated Lace Makers .....	3,361	1 10 11½	—	—	—	—	—	—	—	—	—
Irish Flax Dressers .....	1,284	- 18 5	—	—	—	—	—	—	—	—	—
<i>Building.</i>											
Amalgamated Carpenters and Joiners .....	65,012	- 19 1½	4	40	30	26	6	6	17	68	
United Operative Plumbers .....	11,186	- 1 6½	—	—	—	—	—	—	—	—	—
„ Bricklayers .....	3,438	- - 8½	—	—	—	—	—	—	—	756	
Friendly Stonemasons .....	19,419	- 2 5½	—	—	—	—	—	—	75	123	
<i>Printing.</i>											
London Compositors .....	11,287	- 15 7½	12	55	46	23	55	77	71	100	
„ Consolidated Book-binders .....	1,339	- 15 -½	98	165	145	86	40	48	47	101	
Typographical Association .....	16,179	- 6 7½	—	—	—	182	108	87	98	147	
<i>Transport.</i>											
Amalgamated Railway Servants .....	62,023	- 1 4	—	—	—	—	—	—	—	—	—
<i>Clothing, &amp;c.</i>											
Amalgamated Tailors .....	13,439	- 1 7½	—	—	—	—	—	—	—	—	—
Boot and Shoe Operatives .....	27,960	- - 3½	—	—	—	—	—	—	—	—	—
<i>Miscellaneous.</i>											
United Brushmakers .....	1,470	1 10 6½	—	—	—	—	—	—	—	—	—
Alliance Cabinet Makers .....	5,270	- 17 6	—	—	—	—	—	—	—	—	—
United Kingdom Coach Makers .....	6,526	- 14 7½	—	—	—	—	—	—	—	132	
Yorkshire Glass Bottle Makers .....	2,840	1 7 1½	—	—	—	—	—	—	—	102	
Cigar Makers .....	2,196	1 7 3½	—	—	—	—	—	—	—	—	—
Average of above unions ....	—	- 14 4½	40	85	117	118	60	52	70	190	
Percentage of total imports of each year to average of 1882-91 .....			Average of Imports, 1882-91. Mln. £398	53	55	57	63	60	68	74	69
Percentage of total exports of British produce (excluding ships) to average of 1882-91 .....			Average of Exports. Mln. £235	58	53	53	62	68	70	80	77

TABLE I Contd.—Variations in Unemployed Benefit, and in Total Imports and Exports.

Union.	Number of Members in 1900.	Average of Cost per Member of Unemployed Benefit during Years 1883-91.	Percentage of each Year to Average of 1883-91.							
			1868.	'69.	'70.	'71.	'72.	'73.	'74.	'75.
<i>Coal.</i>										
Northumberland Miners .....	23,950	£ s. d. — 3 1	—	38	—	7	—	50	12	47
Durham Colliery Enginemn .....	3,062	— 4 5	—	—	—	—	—	—	—	—
<i>Metals.</i>										
Iron Founders .....	18,357	1 6 3	245	210	115	42	21	51	68	69
Amalgamated Engineers .....	87,672	— 19 9	196	180	95	33	37	36	49	72
Steam Engine Makers .....	8,495	— 12 4	202	208	163	52	28	36	40	64
Boiler Makers and Iron and Steel Ship Builders .....	47,670	— 14 5½	48	47	39	22	8	14	15	104
<i>Textiles.</i>										
Amalgamated Cotton Spinners .....	18,384	1 — 2	—	—	—	—	—	—	—	—
Blackburn Beamers, Twist-ers and Drawers .....	661	— 7 6½	—	—	—	—	—	—	—	—
Blackburn Weavers .....	12,500	— 4 9½	—	—	—	—	—	—	—	—
Amalgamated Lace Makers .....	3,361	1 10 11½	—	—	—	—	—	—	—	—
Irish Flax Dressers .....	1,284	— 18 5	—	—	—	—	—	—	—	—
<i>Building.</i>										
Amalgamated Carpenters and Joiners .....	65,012	— 19 1½	70	100	108	69	32	25	21	18
United Operative Plumbers .....	11,186	— 1 6½	23	24	44	30	19	29	18	8
„ Bricklayers .....	3,438	— — 8½	1,000	373	240	148	146	173	150	108
Friendly Stonemasons .....	19,419	— 2 5½	146	194	209	110	102	114	84	101
<i>Printing.</i>										
London Compositors .....	11,287	— 15 7½	92	107	152	75	51	41	45	28
„ Consolidated Bookbinders .....	1,339	— 15 —½	141	157	204	78	60	115	101	36
Typographical Association ..	16,179	— 6 7½	118	187	109	77	73	66	97	139
<i>Transport.</i>										
Amalgamated Railway Servants .....	62,023	— 1 4	—	—	—	—	9	—	48	120
<i>Clothing, &amp;c.</i>										
Amalgamated Tailors .....	13,439	— 1 7½	—	64	80	57	59	64	119	130
Boot and Shoe Operatives .....	27,960	— — 3½	—	—	—	—	—	—	—	—
<i>Miscellaneous.</i>										
United Brushmakers .....	1,470	1 10 6½	—	—	—	—	—	—	—	—
Alliance Cabinet Makers .....	5,270	— 17 6	6	27	39	11	1	1	5	10
United Kingdom Coach Makers .....	6,526	— 14 7½	143	125	132	101	69	57	69	65
Yorkshire Glass Bottle Makers .....	2,840	1 7 1½	117	20	19	27	1	1	2	2
Cigar Makers .....	2,196	1 7 3½	—	—	—	—	—	—	—	—
Average of above unions ....	—	— 14 4½	182	125	116	59	45	55	55	66
Percentage of total imports of each year to average of 1882-91 .....	—	Average of Imports, 1882-91. Mln. £398	74	74	76	83	89	98	98	94
Percentage of total exports of British produce (excluding ships) to average of 1882-91 .....	—	Average of Exports. Mln. £285	76	80	85	95	109	109	102	95

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TABLE I *Contd.*—Variations in Unemployed Benefit, and in Total Imports and Exports.

Union.	Number of Members in 1900.	Average of Cost per Member of Unemployed Benefit during Years 1882-91.	Percentage of each Year to Average of 1882-91.									
			1876	'77.	'78.	'79.	'80.	'81.	'82.	'83.		
<i>Coal.</i>			£	s.	d.							
Northumberland Miners .....	23,950	- 3 1	205	466	163	50	40	72	43	52		
Durham Colliery Enginemen .....	2,062	- 4 5	8	201	280	401	76	35	Nil	14		
<i>Metals.</i>												
Iron Founders .....	18,357	1 6 3	107	154	234	355	156	125	69	73		
Amalgamated Engineers .....	87,672	- 19 9	102	122	168	343	140	87	48	70		
Steam Engine Makers .....	8,495	- 12 4	95	122	212	340	142	96	54	67		
Boiler Makers and Iron and Steel Ship Builders .....	47,670	- 14 5½	143	104	160	268	162	15	6	16		
<i>Textiles.</i>												
Amalgamated Cotton Spinners .....	18,384	1 - 2	—	—	—	148	62	75	68	63		
Blackburn Beamers, Twist-ers and Drawers .....	661	- 7 6½	15	22	518	128	10	29	20	171		
Blackburn Weavers .....	12,500	- 4 9½	—	—	—	—	—	19	19	—		
Amalgamated Lace Makers .....	3,361	1 10 11½	68	81	39	—	8	7	—	46		
Irish Flax Dressers .....	1,284	- 18 5	89	61	99	38	—	130	90	75		
<i>Building.</i>												
Amalgamated Carpenters and Joiners .....	65,012	- 19 1½	19	26	66	174	130	107	75	74		
United Operative Plumbers .....	11,186	- 1 6½	11	19	49	102	81	77	57	54		
" Bricklayers .....	3,438	- - 8½	163	399	676	985	451	271	342	120		
Friendly Stonemasons .....	19,419	- 2 5½	70	156	—	—	—	—	63	65		
<i>Printing.</i>												
London Compositors .....	11,287	- 15 7½	66	76	91	140	127	121	109	91		
" Consolidated Bookbinders .....	1,339	- 15 -½	91	218	210	192	128	54	100	115		
Typographical Association .....	16,179	- 6 7½	166	138	184	231	184	163	100	98		
<i>Transport.</i>												
Amalgamated Railway Servants .....	62,023	- 1 4	67	73	100	170	136	128	114	69		
<i>Clothing, &amp;c.</i>												
Amalgamated Tailors .....	13,439	- 1 7½	131	169	152	185	151	131	122	126		
Boot and Shoe Operatives .....	27,960	- - 3½	—	160	253	153	107	40	73	93		
<i>Miscellaneous.</i>												
United Brushmakers .....	1,470	1 10 6½	—	—	166	184	228	112	92	93		
Alliance Cabinet Makers .....	5,270	- 17 6	26	32	62	151	98	69	63	89		
United Kingdom Coach Makers .....	6,526	- 14 7½	93	133	161	306	95	90	75	75		
Yorkshire Glass Bottle Makers .....	2,840	1 7 1½	5	28	195	228	153	102	45	63		
Cigar Makers .....	2,196	1 7 3½	—	—	—	—	—	91	90	97		
Average of above unions ...	—	- 14 4½	83	134	192	240	130	90	77	79		
Percentage of total imports of each year to average of 1882-91 .....	—	Average of Imports, 1882-91. Mln. £398	94	99	93	92	104	100	104	107		
Percentage of total exports of British produce (excluding ships) to average of 1882-91 .....	—	Average of Exports. Mln. £235	86	85	82	82	95	100	103	102		

TABLE I Contd.—Variations in Unemployed Benefit, and in Total Imports and Exports.

Union.	Number of Members in 1900.	Average of Cost per Member of Unemployed Benefit during Years 1882-91.	Percentage of each Year to Average of 1882-91.								
			1884	'85.	'86.	'87.	'88.	'89.	'90.	'91.	
<i>Coal.</i>											
Northumberland Miners .....	23,950	£ s. d. — 3 1	30	61	618	130	48	Nil	5	10	
Durham Colliery Engineers...	2,062	— 4 5	126	192	283	192	63	34	21	72	
<i>Metals.</i>											
Iron Founders .....	18,357	1 6 3	116	166	202	143	79	30	42	76	
Amalgamated Engineers .....	87,672	— 19 9	124	154	163	156	102	48	49	79	
Steam Engine Makers .....	8,495	— 12 4	103	162	185	191	96	41	38	63	
Boiler Makers and Iron and Steel Ship Builders .....	47,670	— 14 5½	275	212	194	122	40	14	48	68	
<i>Textiles.</i>											
Amalgamated Cotton Spinners .....	18,384	1 — 2	81	117	125	122	109	128	94	90	
Blackburn Beavers, Twist-ers and Drawers.....	661	— 7 6½	239	142	81	47	322	182	55	52	
Blackburn Weavers .....	12,500	— 4 9½	—	—	—	67	113	178	106	114	
Amalgamated Lace Makers ...	3,361	1 10 11½	149	167	106	78	87	76	115	74	
Irish Flax Dressers ....	1,284	— 18 5	95	166	146	121	114	91	92	9	
<i>Building.</i>											
Amalgamated Carpenters and Joiners .....	65,012	— 19 1½	99	141	172	135	127	74	49	56	
United Operative Plumbers...	11,186	— 1 6½	52	145	213	135	126	74	70	77	
„ Bricklayers .....	3,438	— — 8½	118	122	118	51	40	37	81	17	
Friendly Stonemasons .....	19,419	— 2 5½	84	97	117	112	147	146	116	63	
<i>Printing.</i>											
London Compositors .....	11,287	— 15 7½	85	107	106	88	95	81	81	132	
„ Consolidated Bookbinders .....	1,339	— 15 —½	97	145	181	113	89	56	48	53	
Typographical Association ...	16,179	— 6 7½	96	110	107	107	128	94	92	71	
<i>Transport.</i>											
Amalgamated Railway Servants	62,023	— 1 4	75	92	86	286	88	45	58	89	
<i>Clothing, &amp;c.</i>											
Amalgamated Tailors .....	13,439	— 1 7½	142	123	113	109	98	65	59	65	
Boot and Shoe Operatives ....	27,960	— — 3½	93	120	87	133	140	107	80	100	
<i>Miscellaneous.</i>											
United Brushmakers .....	1,470	1 10 6½	105	96	110	149	108	90	80	79	
Alliance Cabinet Makers .....	5,270	— 17 6	140	173	206	144	91	34	19	44	
United Kingdom Coach Makers	6,526	— 14 7½	89	124	157	115	132	97	65	64	
Yorkshire Glass Bottle Makers	2,840	1 7 1½	143	120	286	75	89	101	49	30	
Cigar Makers .....	2,196	1 7 3½	98	123	126	111	92	—	—	63	
Average of above unions ....	—	— 14 4½	114	135	168	202	106	77	62	66	
Percentage of total imports of each year to average of 1882-91 .....			Average of Imports, 1882-91.								
Percentage of total exports of British produce (excluding ships) to average of 1882-91 .....			Average of Exports.								
Mln. £398			98	93	88	91	98	107	106	110	
Mln. £235			99	91	91	94	100	106	112	105	

TABLE I *Contd.*—Variations in Unemployed Benefit, and in Total Imports and Exports.

Union.	Number of Members in 1900.	Average of Cost per Member of Unemployed Benefit during Years 1882-91.	Percentage of each Year to Average of 1882-91.											
			1882	'93.	'94.	'95.	'96.	'97.	'98.	'99.	1900			
<i>Coal.</i>			£	s.	d.									
Northumberland Miners .....	23,950	- 3 1	24	274	78	234	148	23	27	44	5			
Durham Colliery Enginemen .....	2,062	- 4 5	20	407	115	399	280	160	73	50	23			
<i>Metals.</i>														
Iron Founders .....	18,357	1 6 3	149	165	188	130	40	137	75	28	46			
Amalgamated Engineers .....	87,672	- 19 9	126	180	181	122	57	90	45	54	48			
Steam Engine Makers .....	8,495	- 12 4	116	241	203	133	51	94	67	52	39			
Boiler Makers and Iron and Steel Ship Builders .....	47,670	- 14 5½	128	175	171	144	119	152	67	34	40			
<i>Textiles.</i>														
Amalgamated Cotton Spinners .....	18,384	1 - 2	124	102	123	143	99	115	57	84	178			
Blackburn Beamers, Twist-ers and Drawers .....	661	- 7 6½	139	301	80	-	-	-	-	-	-			
Blackburn Weavers .....	12,500	- 4 9½	131	209	56	141	98	145	83	73	195			
Amalgamated Lace Makers .....	3,361	1 10 11½	57	77	80	61	52	42	57	39	38			
Irish Flax Dressers .....	1,284	- 18 5	67	43	72	41	37	23	56	49	71			
<i>Building.</i>														
Amalgamated Carpenters and Joiners .....	65,012	- 19 1½	68	79	101	92	35	29	25	26	49			
United Operative Plumbers .....	11,186	- 1 6½	112	122	150	85	80	98	108	80	67			
" Bricklayers .....	3,438	- - 8½	45	60	68	54	48	23	20	20	31			
Friendly Stonemasons .....	19,419	- 2 5½	74	86	121	113	101	69	56	49	88			
<i>Printing.</i>														
London Compositors .....	11,287	- 15 7½	172	159	220	155	135	125	115	148	187			
" Consolidated Bookbinders .....	1,339	- 15 -½	284	174	224	225	144	129	98	113	172			
Typographical Association .....	16,179	- 6 7½	73	129	176	207	210	168	166	147	177			
<i>Transport.</i>														
Amalgamated Railway Servants .....	62,023	- 1 4	278	223	109	126	90	55	450	72	78			
<i>Clothing, &amp;c.</i>														
Amalgamated Tailors .....	13,439	- 1 7½	43	53	47	47	41	39	34	28	26			
Boot and Shoe Operatives .....	27,960	- - 3½	120	153	60	120	140	120	146	100	93			
<i>Miscellaneous.</i>														
United Brushmakers .....	1,470	1 10 6½	129	169	204	134	112	120	128	62	81			
Alliance Cabinet Makers .....	5,270	- 17 6	88	103	102	88	42	37	42	40	63			
United Kingdom Coach Makers .....	6,526	- 14 7½	92	95	106	95	56	55	55	54	60			
Yorkshire Glass Bottle Makers .....	2,840	1 7 1½	103	150	240	205	95	83	107	44	59			
Cigar Makers .....	2,196	1 7 3½	91	98	115	80	65	45	57	46	78			
Average of above unions ...	—	- 14 4½	110	155	123	132	95	87	90	61	79			
Percentage of total imports of each year to average of 1882-91 .....	—	Average of Imports, 1882-91. Min. £398	107	102	103	105	111	114	118	122	131			
Percentage of total exports of British produce (excluding ships) to average of 1882-91 .....	—	Average of Exports. Min. £235	96	93	92	96	102	100	92	109	120			

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In selecting the societies whose records appear in the table, it would have been desirable to make them as representative as possible of the general employments of the country. Unfortunately, some large spheres of employment are necessarily absent. In the cases, for instance, of agriculture and general labour there are no representative societies which have kept records of value relating to unemployed benefit. The records, too, of the textile trades and of coal mining are not adequate to represent the magnitude of the interests involved. The selection has naturally been confined to those societies whose records have been kept continuously and for a considerable period, and which are fairly representative of important industries.

The bottom lines of Table I are occupied by the percentages of the total imports and of the total exports of British produce (exclusive of ships) reckoned on the same base, the figures used being taken from the recent publication of the Board of Trade, Cd-1761.

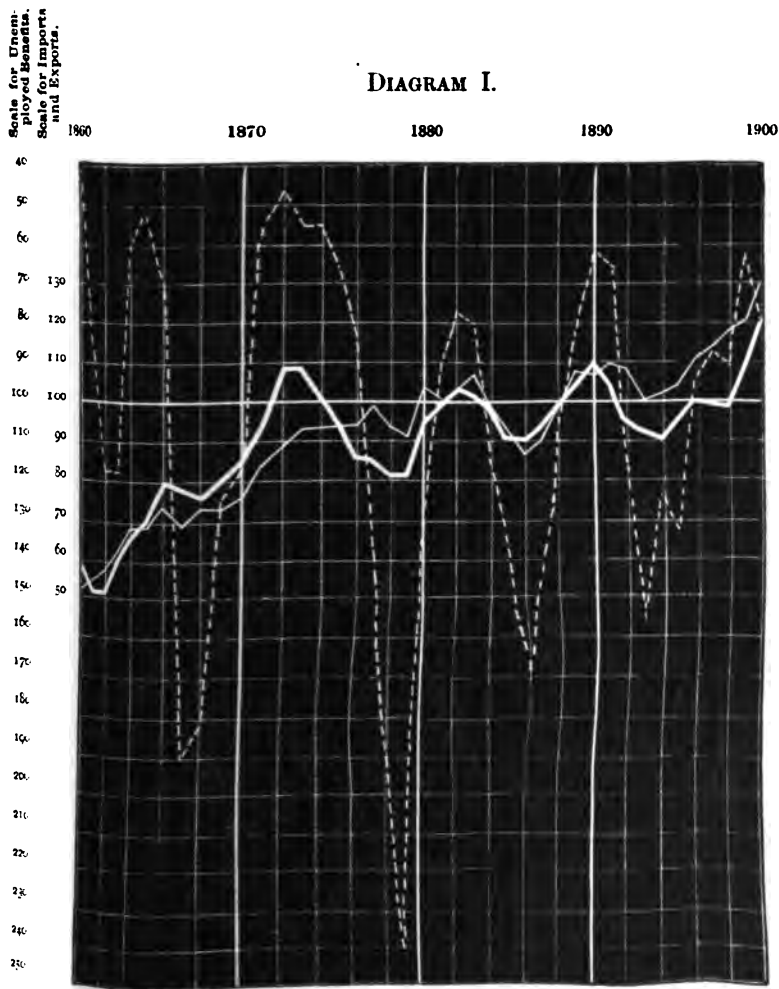
Dealing first with the fluctuations in employments as a whole, it is noticeable that the reports on trade unions during recent years have constantly drawn attention to the intimate relation between the general condition of the trade of the country and the amount expended by the 100 principal unions in unemployed benefit. Since 1897 the reports have contained a table showing side by side the percentage of unemployed and the total value of imports and exports for the corresponding years.

Diagram I enables these general movements to be examined with more minuteness. It shows that, as a rule, fluctuations in imports, exports, and the state of employment, are simultaneous and in the same direction. Exceptions to this general rule are found in 1860-62, 1873-77, 1890-92. In these three periods, while exports were falling, imports were either rising or stationary. It is noticeable that in each of these periods the state of employment followed the direction of the exports and not of the imports. But, generally speaking, the movements correspond in all the curves, and a reference to the diagram in Mr. Wood's paper of December, 1899, shows corresponding movements in the rates of wages, in the consumption of food and clothing, in the marriage-rate, and in the pauperism of the country.

The departure of the curve of imports from all the other curves indicative of the prosperity of the masses of the people during the three specified periods, and particularly during 1873-77, is so marked that it calls for further investigation. One would certainly expect the imports of raw material and of food stuffs to fluctuate in sympathy with the state of employment. That the volume of food

stuffs and of the raw material for clothing does so fluctuate was shown by Mr. Wood's curve of consumption before referred to. That this result could not be affected by a rise in the level of prices appears to be clear from the fact that Sauerbeck's index numbers showed little change between 1860 and 1862, fell considerably between 1873 and 1877, and fell slightly between 1890 and 1892.

DIAGRAM I.



- Percentage of imports of each year to the average value of imports for ten years 1882-91.
- - - Percentage of value of exports of British produce of each year to average value for 1882-91.
- ..... Curve of index number of expenditure on unemployed benefit from the table.

TABLE II.—*Showing the Values of Imports of Manufactured and Partly Manufactured Goods, and of Imports other than Manufactured and Partly Manufactured Goods, and the Percentages of the Values of each Year to the Average Value of the Years 1882-91.*

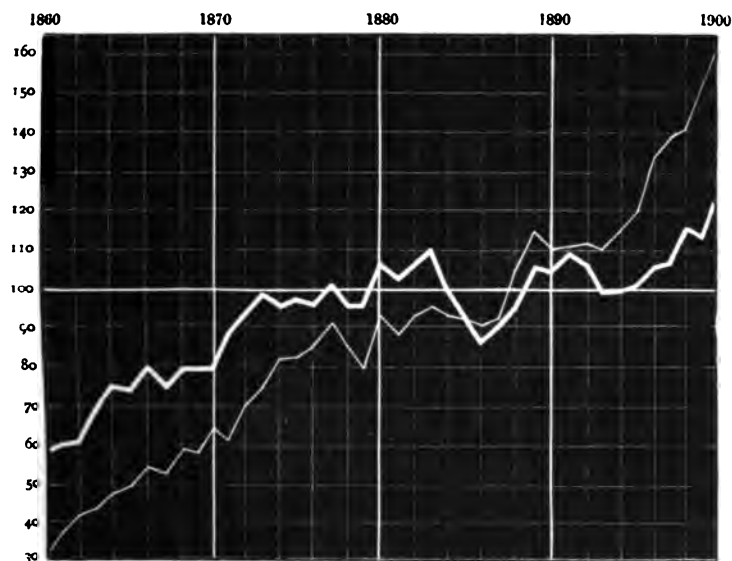
	Value of Imports other than Manufactured.	Percentage to Average of 1882-91.	Imports of Manufactured and Partly Manufactured only.	Percentage to Average of 1882-91.
	In Million £'s.		In Million £'s.	
1860 .....	181	58	29.3	33
'61 .....	184	60	32.0	37
'62 .....	190	61	36.2	41
'63 .....	211	63	38.2	43
'64 .....	233	75	41.9	47
'65 .....	228	74	43.5	49
'66 .....	248	80	47.0	58
'67 .....	228	74	47.5	53
'68 .....	243	78	51.5	58
'69 .....	243	78	51.9	58
1870 .....	246	79	57.0	64
'71 .....	277	89	54.3	61
'72 .....	292	94	63.2	71
'73 .....	304	98	66.8	75
'74 .....	297	96	72.7	82
'75 .....	301	97	72.7	82
'76 .....	299	96	76.1	85
'77 .....	313	101	80.6	91
'78 .....	294	95	75.1	84
'79 .....	293	94	70.4	79
1880 .....	328	106	83.2	93
'81 .....	318	103	78.8	89
'82 .....	329	106	84.1	94
'83 .....	342	110	84.9	95
'84 .....	307	99	82.9	93
'85 .....	288	93	83.4	93
'86 .....	269	87	81.4	91
'87 .....	280	90	82.4	92
'88 .....	295	95	93.2	105
'89 .....	326	105	100.8	113
1890 .....	323	104	98.2	110
'91 .....	337	109	97.6	110
'92 .....	325	105	98.9	111
'93 .....	307	99	98.1	110
'94 .....	308	99	101.7	114
'95 .....	309	100	107.7	121
'96 .....	324	105	117.6	132
'97 .....	327	106	123.8	139
'98 .....	356	115	125.1	141
'99 .....	349	112	135.9	153
1900 .....	378	122	145.2	163
Average of } 1882-91.... }	309.5 = 310 (say) }	—	88.89 = 89 (say) }	—

In order to test these suppositions I have deducted from the figures of the total imports for each year the amount of imports of manufactured and partly manufactured goods as given in pages

5 and 6 of the Board of Trade Report, Cd-1761. With respect to these figures the report points out that the import figures relate to total imports, and include the value of a certain quantity of goods which are re-exported. The report says, however, that in considering manufactured goods this is of comparatively little moment, as the re-exports consist for the most part of food and raw material. Table II shows the actual figures of these distinct divisions of our imports, and also the percentage of each year for each division worked out on the average of the period 1882-91.

Diagram II is based upon the percentage columns of the above table, and shows the respective curves of imported manufactures and of imported food stuffs and raw materials.

DIAGRAM II.



- Percentage of imports other than of manufactured and partly manufactured goods to the average of 1882-91.
- Percentage of imports of manufactured and partly manufactured goods of each year to the average of 1882-91.

The curves of the two classifications of imports afford many interesting points of comment, but the most conspicuous is in the period 1873-76, when the imports of raw material and food stuffs were falling slightly simultaneously with the curve of exports and the curve of employment, while the imports of manufactured and

partly manufactured goods were continuing in a steady rise, which culminated in 1877.

In dealing with the various industries in detail, it will be convenient to have at hand the number of persons engaged in the different groups of occupations as classified in the Census Report for 1901.

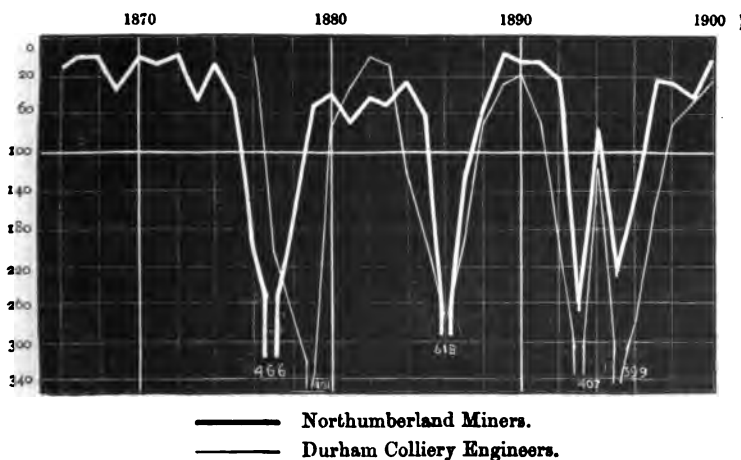
TABLE III.

	Male.	Female.	Total of Males and Females.	Percentage to Total Occupied.	
				Males Only.	All.
Engaged in national or local government.....	171,687	26,500	198,187	1·6	1·4
Defence of the country .....	168,238	—	168,238	1·6	1·2
Professions and their subordinate occupations .....	311,618	294,642	606,260	3·7	4·2
Domestic services .....	304,195	1,690,722	1,994,917	3·0	13·9
Commercial .....	590,685	59,944	590,629	5·2	4·1
Conveyance of men, goods, and messages .....	1,249,000	18,825	1,267,825	12·3	8·9
Agriculture .....	1,071,040	57,564	1,128,604	10·5	7·9
Fishing .....	23,725	166	23,891	0·2	0·3
Mines and quarries .....	800,179	5,006	805,185	7·8	5·6
Metals, machines, implements, and conveyances .....	1,174,180	63,016	1,237,196	11·5	8·6
Precious metals, jewels, watches, &c. ....	130,731	18,707	149,438	1·2	1·1
Building and works of construction .....	1,042,864	702	1,043,566	10·2	7·3
Wood, furnishing, fittings, and decorations .....	233,000	24,592	257,592	2·3	1·8
Brick, cement, pottery, and glass .....	142,365	33,148	175,513	1·4	1·2
Chemicals, oil, soap, &c. ....	101,938	26,702	128,640	1·0	0·9
Skins, leather, hair, and feathers .....	80,071	25,270	105,341	0·8	0·7
Paper, prints, books, and stationery .....	188,057	90,900	278,957	1·8	1·9
Textile fabrics .....	492,175	663,222	1,155,397	4·8	8·1
Dress .....	414,637	710,961	1,125,598	4·1	7·8
Food, tobacco, drink, and lodging .....	774,291	299,518	1,073,809	7·6	7·5
Gas, water, and electricity supply, and sanitary service .....	71,284	141	71,425	0·7	0·5
Other, general, and undefined workers and dealers .....	681,016	61,503	742,519	6·7	5·2
Total engaged in occupations .....	10,156,976	4,171,751	14,328,727	100·0	100·0
Without specified occupation or unoccupied .....	1,977,283	9,017,834	10,995,117	—	—
Population over ten years .....	12,134,259	13,189,585	25,323,844	—	—



Passing to particular industries, the first group is that of mines. The statistics of unemployed benefit referring to these are very scanty. Many of the most important coalfields are unrepresented, and the best available records are those put in the table. The curves show great depressions between 1875-79, 1884-88, and 1892-97. In the first period the different coalfields experienced their maximum of distress in different years. In Northumberland the maximum payment was made in 1877, while in Durham 1879 was the bottom year. All appear to have felt the depression of the next decade most severely in 1886. In the last depression employment improved temporarily in 1894, owing to the great disputes in 1893, and the consequent exhaustion of stocks. The curves generally coincide with the general movement of our foreign trade. The fluctuations are more sudden and more pronounced than in the other industries of the country. This is doubtless due in a large measure to the fact that labour plays a large part in the cost of production, and fixed expenses a small part. Mr. D. A. Thomas, in his paper published in the Society's *Journal* of September, 1903, estimated the cost of labour at about 80 per cent. of the total cost of Welsh steam coal, while fixed charges form less than 10 per cent. of the total cost.

DIAGRAM III.

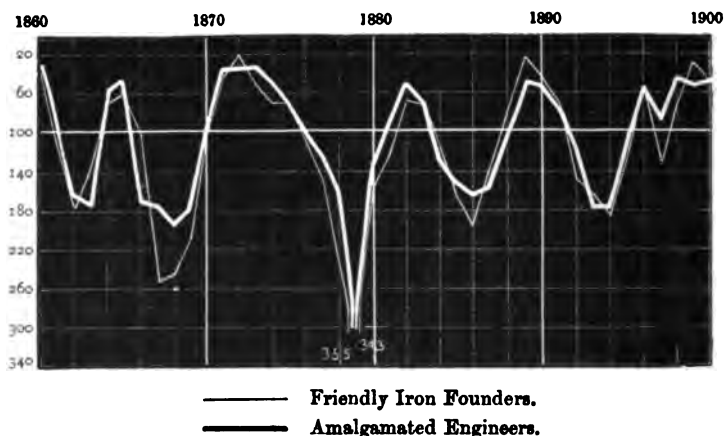


*Note.*—In those years where the figures are given, the curve has run outside the limits of the scale.

The metal trades are well represented by the societies in the table. The records of these have evidently been kept with great care, and the curves based upon them show great uniformity. On

account of its importance and size, the Amalgamated Society of Engineers may be taken as the best representative of the group. The curve of its unemployed benefit is almost identical with that of the Steam Engine Makers.

DIAGRAM IV.



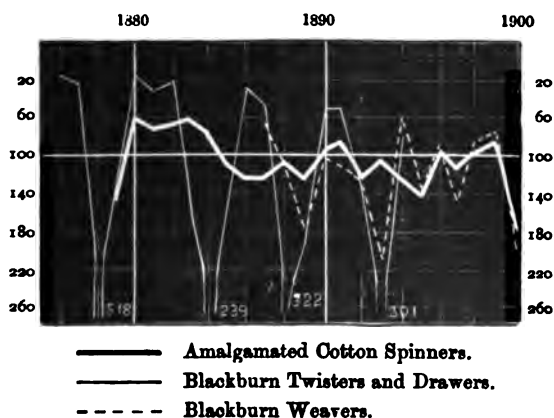
*Note.*—In those years where the figures are given, the curve has run outside the limits of the scale.

The activity of the metal trades depends so directly upon the activity and enterprise of the world at large, that one is not surprised to see how closely the curve of employment in this group of industries follows the curve of our exports. The fluctuations are much more gradual than in the coal trade, due partly to the fact that a large amount of capital is sunk in fixed plant, and consequently in times of depression the return upon this capital provides a margin which is sacrificed before the labour engaged in these industries is thrown out of work. The depressions in the metal industries naturally coincide with those in the mining industry. As these industries together employ nearly 20 per cent. of the male working population of the country, their influence upon the home trade must be very great, and it will be seen later that the curves of employment in many home industries are in close harmony with those of the metal trades.

The textile trades are not adequately represented in the table. The number of societies which during recent years have kept records of unemployed benefit is very great, but, as a rule, their membership is small and their individual importance is inconsiderable. The Amalgamated Operative Cotton Spinners may be taken as typical

of cotton spinning. It has a membership of 18,384, while the total number of persons employed in cotton spinning in 1901 was 64,127 males and 34,553 females. In the cotton weaving industry there are a large number of local societies, many of whose records cover only recent years. Of these perhaps the best representative is the Blackburn Weavers' Society; but as their record only starts with 1886, the record of the Blackburn beamers, twistors, and drawers is added as an indication of the state of employment in the weaving branch of the cotton industry during the earlier part of the period under review.

DIAGRAM V.



*Note.*—In those years where the figures are given, the curve has run outside the limits of the scale.

The curves illustrate the fact that cotton spinning is often bad when weaving is good, and *vice versa*. The curve of spinners, too, suggests that the fluctuations in the employment of spinners are less severe than in the case of weaving; and it is again noticeable that the proportion of cost due to fixed plant as compared with the cost of labour is much greater in spinning than in weaving.

From the fact that the value of exports of cotton yarn and goods amounts to about one-fourth part of our total exports, one might expect that the curve of employment in this trade would follow the curve of exports. But coming from the examination of the metal group, one is rather astonished to find how the cotton curves depart from the export curve. Though they show some response to the great general movements, the fluctuations peculiar to themselves are almost equally marked. It should be borne in mind that though the general demand of the world for cotton goods is an important factor in its prosperity, the demand from India is of

especial importance. India takes two-fifths of the total cotton goods exported. Hence the price of silver and the rate of Indian exchange have played a very prominent part in the fortunes of the cotton trade since the demonetisation of silver in 1872-73. The weavers' diagram shows a marked improvement in employment in 1894, while the general trades of the country were in the slough of despond. This was due to the rise in Indian exchange which followed the closing of the Indian mints in June, 1893. Then another factor peculiar to the cotton trade is the supply of its raw material. The effect which this factor has upon the employment curve has no relation whatever either to the exports of cotton goods or to the total exports of the country. In 1903 the high price of raw cotton swelled the value of the exports of cotton goods, but diminished employment considerably. Roughly speaking, the cost of raw material amounts to nearly one-half of the cost of finished cotton piece goods.

The foregoing conditions to which the cotton trade is subject offer some explanation of the great divergence between the curves of employment in this important industry and the curves in the great home industries. The total number of persons employed in the industry is so considerable, that one would expect their prosperity to be reflected upon the secondary industries of the country which their wages help to support. In estimating the importance of the number employed, some allowance should be made for the large proportion of females to males, for the employment of a large number of children, and for the fact that wages generally are lower than in the metal trades.

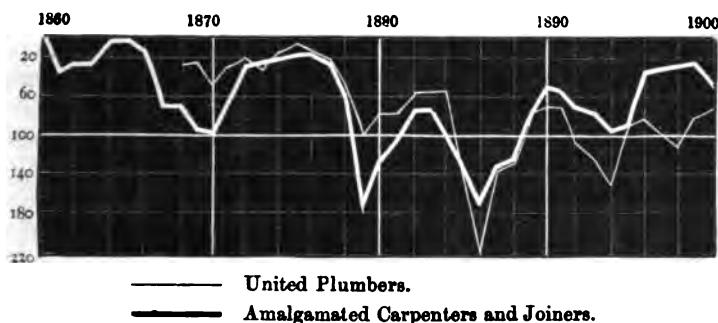
The lace makers and the flax dressers of Ireland, in common with other textiles, are affected more by causes peculiar to themselves than by the general movements of the trade of the country.

Speaking generally, the employment curve in the textile trades is quite unreliable as an index of the general prosperity of the country, while that of the metal trades is singularly reliable.

The building trades form the only large group of essentially home industries which are represented in the table. The Amalgamated Carpenters and Joiners may be safely taken as the best representative of the class.

The remarkable feature of the diagram is the closeness with which it responds to the general movements of our foreign trade during the last quarter of a century. Its greatest departure from the general movements was during the few years following the Franco-German war. From 1873 to 1877, while the metal group was gradually falling into a deeper and deeper depression, the building trades were practically unscathed. In common with

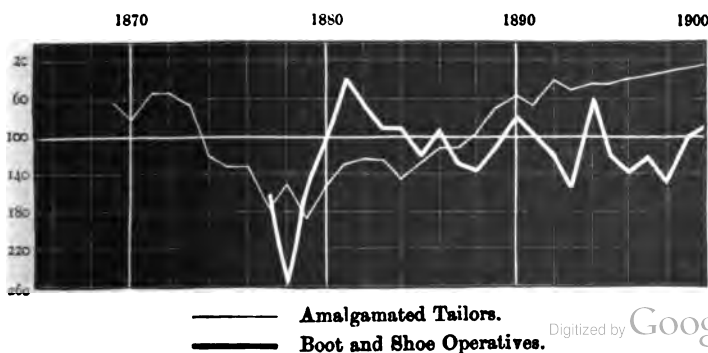
DIAGRAM VI.



agriculture, and with some of the smaller home industries, the building trades retained their prosperity till about 1877, when all industries began to be overwhelmed in a common fate, which reached its most intense form in 1879. The curve of the United Plumbers merely emphasises the same points, while the curve of the operative stonemasons differs very slightly, except that from 1877 to 1881 this society appears to have entirely suspended payment of unemployed benefit. The prosperity of the building trades between 1873 and 1877 was doubtless contributed to by the great demand for suburban residences round all the great centres of industry, following upon the wonderful accumulation of wealth during the previous decade, and also to a continuance of hope and enterprise, for some time after the real depression set in, among those who anticipated that the reaction following the Franco-German war would be as short lived as the reaction following the American civil war in 1861-65, and that of the Austro-Prussian war in 1866.

The dress group is represented by the Amalgamated Tailors and the Boot and Shoe Operatives. The tailors have had a comparatively

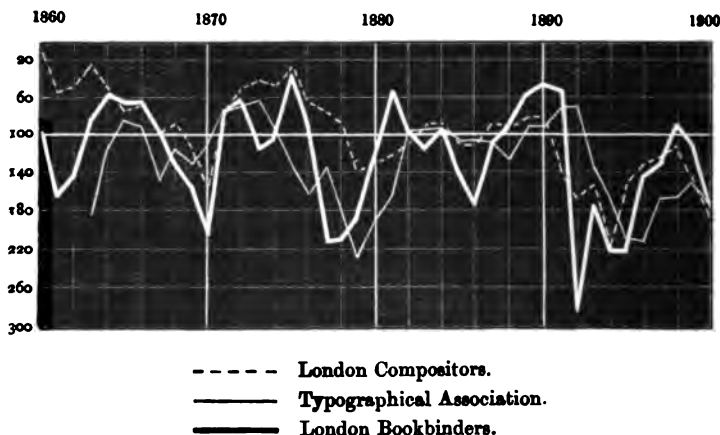
DIAGRAM VII.



uneventful career. Their unemployed gradually increased from 1873 to 1879, since which date they have made steady progress. A dip in 1884, and another in 1891, are the only concessions they have made to the troubles of others. Boots and shoes, on the other hand, reveal two strange features: in 1886, and again in 1894, they had short outbursts of activity, while in other industries the unemployed were walking the streets in ever increasing numbers.

The printing trades supply curves which correspond fairly closely with those of the building group, with the exception that the London Compositors and the Typographical Association show only a slight depression in 1885-87. All the three societies in the table show a marked loss of employment since 1892.

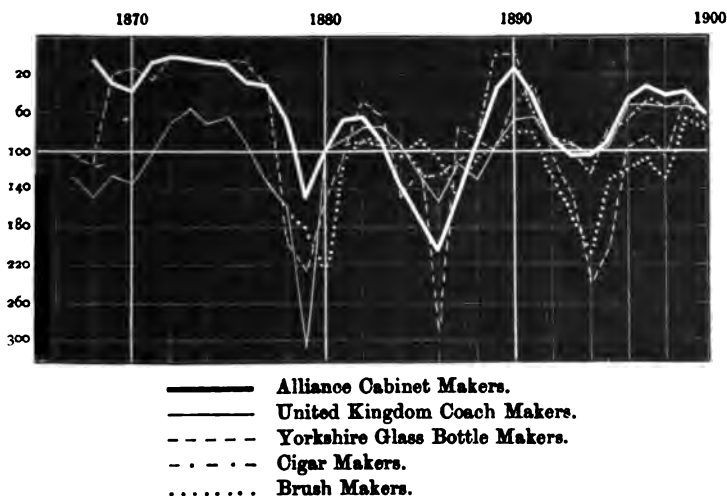
DIAGRAM VIII.



The Amalgamated Railway Servants is the only society connected with transport with any records earlier than 1882. Its membership has varied very largely, so that its figures are not very reliable. The curve of its employment departs considerably from the general average, especially in the last decade. The conditions peculiar to their employment are so obvious, that it cannot be taken as a good representative of those engaged in transport.

The miscellaneous group contains a number of industries selected partly by reason of their diversity, but largely because they are represented by societies which have kept records for considerable periods. With regard to these industries it is difficult to get any other continuous record of their prosperity of equal value. They may be taken to represent a number of miscellaneous industries employing in the aggregate a very large quantity of labour.

DIAGRAM IX.



Each of the societies had years of minimum employment in 1879 (except the Brush Makers, in whose case it came in 1880 instead), 1886 and 1894, while 1873, 1882, 1890 and 1899 were years of maximum employment. Thus each of these diverse trades moves in close sympathy with the foreign trade of the country.

As the curve of the marriage-rate moves harmoniously with the foreign trade, so the curve of the cabinet makers moves with the marriage-rate. Their employment is naturally most brisk when the marriage-rate is highest, and most depressed when the marriage-rate has reached a minimum point. The only necessary qualification of this statement arises in 1891, when cabinet making began to fall, while the marriage-rate increased slightly before following the general downward movement. May we not infer that the promises made during the prosperity of 1890 were faithfully performed in 1891, even though the prosperity had declined so rapidly that the brides of 1891 had to be contented with less than the usual equipment of furniture?

As the employment of the cabinet makers reflects the prosperity of the mass of the population, that of the coach makers reflects the condition of the wealthier classes. Which section of the public is most accurately reflected by the employment of British cigar makers, I will not venture to suggest. But it is clear from the diagrams that furniture, coaches, glass bottles, cigars and brushes all contribute their quota of evidence that the community of industry and commerce is one body with many members, and if one member suffers, all the members suffer with it.

## DISCUSSION on MR. E. L. HARTLEY'S PAPER.

PROFESSOR F. Y. EDGEWORTH offered remarks on some technical points. As he understood Mr. Hartley's Table I, the row of figures designated "Average of above unions," were each obtained by taking the arithmetic mean of the percentages in the corresponding column; each percentage being obtained by comparing the expenditure on benefit per member in a particular union for a particular year, with the average yearly expenditure per member in the same union at the initial period. If the statistics related to an ordinary money account, the proper method of obtaining averages for several unions might have been to compare the total of the expenditure on all the unions in each year with the corresponding total for the average year of the initial period. But, as the writer had explained, the expenditure on benefit was but an imperfect index of that quantity which was to be measured, the amount of unemployment, or perhaps the prosperity of the working classes. Under such circumstances it was allowable to take a simple average of the percentages in each column. But that simple average should rather be the Median than the Arithmetic Mean. For the worth of the different percentages, considered as observations measuring the *quæsitum* (unemployment), was evidently very different. The percentage for bricklayers, for example, represented a change in an expenditure on benefit amounting to  $3,438 \times 8\frac{1}{2}d.$ —some 125*l.*, supposing the number of bricklayers entitled to receive benefit constant; while, on a similar supposition, the percentage for amalgamated engineers represented a change in an amount of  $87,672 \times 19s. 9d.$ , more than 86,000*l.* Even if the supposition of constant membership was only approximately true, and even though the amount of the expenditure only imperfectly represented the amount of unemployment, still it was evident that the percentages were far from being equally good measures of that amount. But when observations of very different weight had to be combined with a simple average—in which each constituent counted for one—then in general that simple average had better be the Median than the Arithmetic Mean. For example, suppose the given observations to consist of two equally numerous classes, and that one class was much less accurate than the other, the error to which an observation of the former class was liable, as measured by the *modulus* or *standard deviation*, was as much as two-and-a-half times as great as the error pertaining to the latter. In such a case the simple Median would afford a more accurate (as well as more convenient) measure of the *quæsitum* than the simple Arithmetic Mean: *a fortiori*, when the disparity in the worth of the observations was greater. Now there was reason to believe that in the case before them the disparity in the observations was such



as to render the Median the more appropriate simple average. It was evident to common sense that such a percentage as 1,000 relating to the bricklayers in the year 1868, if combined according to the method of the Arithmetic Mean with 13 other percentages which range from 6 to 245, would unduly drag up the average, considering that, for a reason already stated, many of the percentages for other unions, as compared with the percentage for bricklayers, were better indices of the quæsitum, the total unemployment. Accordingly the Medians which he had calculated as samples represented the average unemployment for the years 1870-80 better than the corresponding Arithmetic Means which were given in Table I:—

Years.....	1870.	1871.	1872.	1873.	1874.	1875.
Median .....	109	54.5	34.5	45.5	48	69
Arithmetic mean.....	116	59	45	55	55	66

Years.....	1876.	1877.	1878.	1879.	1880.
Median .....	89	122	165.5	184.5	127.5
Arithmetic mean.....	83	134	192	240	130

The fluctuation of the new series was similar in direction to that of the old series, but less violent. There still appeared a close correspondence between the amount of unemployment and exports in direction of their oscillations; and a similar but rather close correspondence between unemployment and imports. The contrast between imports and exports as to the degree of correspondence with unemployment might appear less marked when account was taken of the probable error to which the statistics of trade were liable.

Miss C. E. COLLET called attention to one point which she thought should be noticed with regard to unemployed benefit in the textile trades. Although there might be very bad trade, that bad trade did not show itself to any great extent by people being dismissed, but rather by the adoption of short time or by slackness. The boot and shoe and tailoring trades, as well as the textile trades, would all be found subject to that rule—they were not actually out of work in the same way as engineers.

Mr. BRABROOK was always glad when public attention was drawn to what he might call the peaceful operations of trade unions. People were too much inclined to look upon trade unions as hostile bodies created for the purpose of carrying on warfare between employer and employed, and they overlooked benefits which were distributed by trade unions amongst their members, not only in the direction of the out of employment benefits, but also ordinary friendly society benefits, such as pay-

ments during sickness and superannuation payments in old age. Very large sums were distributed in these directions by the trade unions relatively to the sums they distributed in strike pay. It was desirable that the public should be made to understand that these institutions exercised large functions of a peaceful character, and that that circumstance tended to make them less aggressive and less willing to enter upon hostile pursuits, because they knew that everything that was spent in strike pay diminished the amount they would have available for the ordinary peaceful requirements of their members. He expressed a wish that the diagram in the paper could have been supplemented by a large coloured diagram on the wall. They would all undoubtedly agree in the concluding words of the paper—that all these things which the author had referred to “contribute their quota of evidence that the community of industry and commerce is one body with many members, and if one member suffers, all the members suffer with it.” He must confess, however, that the line which had been drawn between one only of the factors which contributed to the prosperity of the country and these various trades, with all their differing conditions and circumstances, was almost too near and too accurate to be convincing to one's mind. He would have liked to have seen it displayed in such a manner that one could have exactly followed the various resemblances and the various divergencies which constituted the general result. While the prosperity of the country and the extent of employment amongst all classes of the country were things which must necessarily have a close relation to each other, it would not necessarily result that a single collection of facts—namely, the amount of out-of-employment benefit which was granted by trade unions—should follow with absolute closeness other collections of facts which were quite independent of them. For example, the trade unions in some trades represented only a small proportion of the amount of employment in that trade, and that proportion was selected by themselves for various reasons, and its extent depended very largely on the circumstances and conditions of the particular trade involved. Therefore it was only on a very broad and very large comparison of facts that one would expect to see a very close resemblance and association, such as had been disclosed in this very excellent and careful paper.

Mr. R. H. HOOKER did not quite follow the author's suggestion that a more correct method of measuring “cost per member” (p. 53) would be to divide the expenditure by the number participating in the benefit, unless by “participate” was to be understood “entitled to participate.” In Diagram II Mr. Hartley laid great stress on the differences between the curves in the years 1873-76; but differences at least equally striking could be observed in other years if the relative movements were considered, *e.g.*, the separation of the two curves was in reality more marked in 1883-86, although both were falling. To his mind, however, the most interesting feature of that diagram was the more rapid increase shown in the imports of manufactured goods as compared with other commodities. He was

not quite convinced by Professor Edgeworth's suggestion that the median might give a truer picture than the arithmetic average. The median would indicate the condition of the average trade, but not necessarily the average condition of the whole country. Where one or two industries were very largely affected, he thought that they should be taken into account in getting an average for the whole country; and in the paper before them this latter was, it seemed to him, the information sought for. Mr. Hooker also ventured to differ from Mr. Brabrook's view that it would have been better to have one large diagram, including the movements of all the trades, than several small ones; a diagram, to be clear, should have as few lines as possible on it, and he accordingly preferred the method which had actually been adopted by the author. Finally, he would point out that a decrease in breaches of promise in 1891 was not the only inference to be drawn from the figures relating to cabinet makers. It seemed to him that the curve was quite normal, and consistent with the usual theory that manufacturers in times of trade maxima turned out large stocks, which were worked off during years of depression.

Mr. T. A. WELTON said it appeared to him that the exclusion of exceptional figures from averages was often advantageous. He was at one time associated with the timber trade, and from his experience he found that it was a year or two after other trades were affected before the timber trade felt the effects of prosperity or the reverse. In like manner he thought they would find that the reason the building trade was more durable in its prosperity than other trades, was that building was a good deal fostered after the decline of general trades because of the cheapness of money when trade was slack. He thought it was a pity that the marriage curve was not included. With respect to the furniture question, he might mention that when in 1902 he was drawing attention to the considerable checks that happened in the marriage and birth-rates, he was informed by a friend in the bedstead trade that there had been a great slump in bedsteads, and his friend associated the two things.

Mr. JESSE ARGYLE thought the paper was of considerable interest so far as it went, but was not very conclusive; the basis was too narrow. If one compared the totals in the trade unions selected in some cases with the totals engaged in the trade, it would be found that they hardly amounted to 5 per cent. of the total employed. Again, the trade unions as a general rule comprised the very best of the workers, so that, taking the whole trade through, the percentage of unemployed would probably be found to be greater. Then, as the writer pointed out, the comparison was vitiated by the fact that the number of members in the society was taken, and not the number who contributed to unemployed benefit. In some societies that would make a very serious difference. The point as to short time mentioned by Miss Collet applied to several employments besides the textile trades, particularly mining. Further, there was the question of sickness to be taken into

account. Many societies had no sick benefit, and so numbers of men were returned as unemployed, when it was really sickness that kept them out of work. That was more particularly the case with declining industries. The paper no doubt suggested a line of study from which a good deal could be obtained, but it needed to be pushed a good deal further before its conclusions could really be accepted.

Mr. W. POLLARD DIGBY expressed regret that the paper did not give the specific imports and exports of the industries in which the leading unions which Mr. Hartley had quoted were engaged, inasmuch as one branch of the country's industry might be fully occupied while another branch might be working short time, as happened, for instance, in Glasgow some years back, when the locomotive builders were short of work, and members of the trade union employed by the locomotive manufacturers found employment in the shipyards, which happened to be busy. He would also like to ask whether years of maximum exports were always years of maximum employment, because in 1901, while throughout Prussia, Saxony, and Bavaria there were large numbers unemployed, yet in that particular year the exports of Germany reached a value hitherto unknown. What Mr. Hartley had said with regard to the larger unions of the country did not, he thought, always apply to the smaller. He had some figures of the Electrical Trades Union, whose members were composed of artisans, wiremen, and so forth, 90 per cent. of them being engaged in the wiring of buildings. The figures showed, curiously enough, that the year of maximum imports was the year of maximum payment of out-of-work benefit, while the year of maximum exports was also a year of high expenditure on out-of-work benefit. Thus, while the membership of this particular union had risen, and while the exports of electrical apparatus had increased, the payment of out-of-work benefit had gone up in each year.

Mr. W. M. ACWORTH referred to Mr. Brabrook's statement that unions only represented a small percentage of the trade. In some cases that was no doubt so, but in other cases he supposed they represented a very large percentage, especially in the case of a local union. For instance, he believed he was right in saying that the London compositors, who were mentioned by the author, represented a very large percentage of their industry, and with regard to the silk hat makers, there was said to be not a silk hat made except by members of the union. Probably the same thing was more or less true in the case of most small trades. He would like to ask Mr. Hartley how far it might be the case, especially in the smaller unions, that the reason for unemployed benefit, or the fact of people being unemployed, was a cataclysm in the trade itself. There was, for instance, some time ago, a great fight between the compositors and one of the great printing firms, and the printing firm beat the men and became what the London compositors called "an unfair house." That was probably represented by a large

drop in the employment of men belonging to the compositors' trade union. That was a matter quite outside any question of general laws and tendencies. He thought it would be possible, in the local unions at any rate, to give alongside the number of a trade union on a given day, the number according to the census who were engaged in that trade. If this could be done, it might indicate to what extent causes such as those he had referred to vitiated the conclusion they were asked to draw as to the broad and general causes.

Mr. F. HENDRIKS pointed out for the information of the last speaker that in Table III were given the numbers of the different groups of occupations specified in the Census report of 1901, from which it seemed in round figures that there were about 10,000,000 employed industrially.

Mr. W. M. ACWORTH objected that they could not be correlated with any particular trade.

Mr. HENDRIKS replied that to some extent they could be. As to the designations, "fishing, mines and quarries, metals, machines, implements and conveyances," those were, for example, some of the designations in the Census report, and they might include iron-founders, amalgamated engineers, steam engine makers, boiler-makers, and iron and steel shipbuilders. Those were some of the great industries; but altogether, if they were to add up Mr. Hartley's figures in his Table I of analysis of occupations, the members of the unions mentioned amounted to 473,980 persons, as compared with 10,000,000 in the census, and that was not more than  $4\frac{1}{2}$  per cent. of the whole number employed. Certainly this was only a small proportion, nevertheless it might be a fair sample of the total.

Mr. N. L. COHEN drew attention to the suggestion that useful information bearing on the question of lack of employment could now be obtained from the organised labour bureaus, independently of the trade unions. He had been pleased to note that in late years there had been less hesitation on the part of the trade unions in reference to such organisations. It would be a great benefit if, throughout the country, the newly established local organisations should be at least empowered to set up such labour bureaus. It was a curious circumstance that when the Act of Parliament authorising the London local organisations or borough councils to establish labour bureaus was passed, no member of Parliament should have suggested that a similar facultative power should be also expressly enacted for country organisations. He had always pleaded, during the nineteen years in which he had advocated a system of labour bureaus, that such arrangements were likely to be even more beneficial in sparsely populated than in very populous districts. As showing the caution with which they should generalise from the paper, he would like to emphasise the remark on p. 60,

that there was no information at all with regard to lack of employment, as there existed no system of out of work benefits specially for the agricultural classes or for general labourers. Whilst appreciating the interesting conclusion which had been suggested by the paper, that there was apparently a very close relation between the variation in the export of manufactured and partly manufactured goods and the variation in lack of employment, he thought there must be other influences at work affecting the latter factor. For instance, one would think the curve of lack of employment would be also greatly affected by the provision of manufactured and partly manufactured goods for the home market. He would not venture to speculate on the cause of the special relation suggested by the paper, or whether exports were stimulated by the depression of the price of goods in the home market. As a comparatively old member of the Society, he welcomed the prospect of having further carefully collated papers from the able pen of the author of that paper at some future time, continuing the inquiry perhaps with a somewhat wider scope. Miss Collet's observations on the paper seemed to point to the conclusion that statistics alone, however conscientiously and carefully prepared, were not a sufficiently conclusive guide to the condition of the working population. They required to be supplemented or corrected by business and commercial experience. An inquiry which simply presented tabulated statistics, without giving the opportunity to traders and workers to relate their actual experience, could not be entirely satisfactory. This fact seemed to afford a clue to the absolutely contradictory character of many allegations in reference to the trading and industrial activity of the country.

Mr. OWEN FLEMING observed as to the building industry, that the members of the different trades connected with it were fairly well employed simultaneously. When there was a great deal of building going on, carpenters, bricklayers, plumbers and masons were well employed, and when there was no building, unemployment was also fairly general. Looking at the table of the average cost of the unemployed to the members of the building and allied trades from 1882 to 1891, he saw that the carpenters received 19s. for that decade; plumbers, 1s. 6d.; bricklayers, 8d.; stone masons, 2s. 5d. He did not see why carpenters should be having 19s., while bricklayers were only receiving 8d. It might, of course, be that the bricklayers did not pay unemployed benefit on such a large scale as the carpenters, and he would be glad if Mr. Hartley could enlighten him on that point. As to Miss Collet's question, he would ask whether the textile trade unions paid for unemployed benefit when they were working short time? (Miss Collet: "No.") In conclusion, he asked whether the author had been able to test the alleged analogy between exports and unemployed benefit in other countries. It would be interesting to know whether the same correlation of curves was to be found there.

The PRESIDENT proposed a hearty vote of thanks to Mr. Hartley for the great pains he must have taken in bringing together the

data employed and in presenting them in the graphic method he had adopted. It was, however, essential, that they should bear in mind, in endeavouring to draw conclusions upon this matter, how important were such factors as the relative magnitude of the different bodies concerned in determining the relative degrees of influence to ascribe to these separate curves, or, again, the varying movements in particular classes of exports or imports which might have peculiar relation to particular trade depressions. In many different directions interesting side lights would be thrown upon the subject of periods of slack employment by a study of the paper. The suggestion which Mr. Hartley made, that so unlikely a cause of increased employment as unemployed processions might nevertheless ultimately increase the business of the shoemakers, was striking, even if probably true. There were, indeed, all through the paper doubtless other veins of connection which even the good discussion they had had failed to bring out, but which some amongst them who were interested in the larger questions which were agitating the country might yet be able to discover. A careful study of the groups of separated yet related diagrams would, no doubt, assist further discussions on the very interesting subject of the dominant factors which influenced unemployment in our very complex and remarkable industrial system.

MR. E. L. HARTLEY, in reply to Professor Edgeworth's criticism, said that he merely used the arithmetical average of the twenty-six unions in Table I as one test of the fluctuations of prosperity. Almost identical results would be obtained if they applied any of the five tests which had been applied by Mr. Wood. He wanted to establish the reliability of expenditure on unemployed benefit by the societies mentioned in the table as a test of fluctuations of prosperity, because there was no other continuous statistical record, to his knowledge, bearing upon the prosperity of many of those trades. He would ask the gentleman who would have liked him to have put in the paper the imports and the exports relating to each particular trade, what imports and exports could be shown as bearing upon the prosperity of the building trades or the printing trades? There were no other statistical records of any kind, so far as he knew, bearing upon the prosperity of such industries as the British cigar makers, cabinet makers, coach makers, or brush makers. Therefore, as there was a mass of statistics based on the amount of money paid by the societies in unemployed benefit, it seemed well to see if any use could be made of them. As to the question whether the records of unemployed benefit were reliable, the criticism had been made that the number of trade unionists employed in each of the trades was an exceedingly small percentage of the total number employed. That was true, and he would also admit that the trade unionists were as a rule the aristocracy of labour, and that they would suffer less from a depression in trade than the mass of the people engaged in the trade. But if he proved that the aristocracy in each industry were feeling depression in certain periods, was it not a safe inference that the residue of the

people engaged in the industry would feel that depression rather more quickly and in a more intense form? Hence the comparison of the fluctuations of prosperity in the separate industries, being all based upon the same test, was fairly reliable. That answer would apply to most of the questions raised in the discussion as to the reliability of the test. The criticism of Miss Collet he regarded as very pertinent. In the textile and in some other trades depression often affected the working people by reducing their employment to three or four days a week, instead of their being dismissed for a prolonged period, and in that case their loss of employment was not shown in the amount of unemployed benefit. But it might be taken that when the textile trades were in a bad state, while some firms were working short time, from a merciful desire to decrease the distress of their workpeople and to keep them together, other firms would close their factories entirely, and so they might reasonably assume that even in such a case the amount of money paid in unemployed benefit would record the depression in the industry, though the system of working short time would tend to hide the severity of the depression. The comparison between the curves of our imports and exports and that of employment, was made chiefly for the purpose of showing the general movements of trade and comparing with them the general fluctuations of employment. He refrained from drawing any inference from it, except that generally speaking great trade movements made themselves felt not only in the exports but also in the imports, as well as in employment. In some periods imports and exports might be moving in opposite directions, and then it would be found that the curve of employment followed the exports. That was also true of the other tests which had been employed by Mr. Wood, viz., changes in wages, consumption of food and clothing, the curve based upon pauperism, the curve based upon the marriage-rate, and the curve based upon the number of people unemployed as given by the Board of Trade. It seemed to him that statisticians by dealing with averages often lost the greater human interest to be derived from the examination of individual cases. He had attempted to go into the history of some individual trades. He had been astonished to find how closely the employment in many secondary and parasitic industries followed the curve of the export trade. He was struck, too, with the fact that the state of the metal trades was an excellent barometer of the prosperity of the country at large, while that of the textile trades was a very bad one. The curve of the marriage-rate showed that marriages go in epidemics, which continue as a rule for two years. Epidemics occurred in 1872-73, 1882-83, and in 1890-91. If the marriage-rate had followed the state of prosperity strictly, it would have been cut off in 1890, instead of continuing, as it did, for the usual two-years period in 1890 and 1891.



## MISCELLANEA.

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I.—*Our Exports of Coal-Capital.*<sup>1</sup> By JOHN HOLT SCHOOLING.

EXAMINATION of our exports of British produce during the last thirty years—distinguishing exports of coal—yields some important and instructive results that throw light upon the present-controversy concerning our system of trade.

Many persons know that our exports of coal are considerable, and that they have increased more than other British exports have increased. But knowledge in this respect is perhaps rather vague, and, the matter of our coal exports being of much importance, it may be useful to show some of the facts—letting them be broadly based upon a long and continuous period of observation. Statements that are based upon individual years, or even upon short periods of years, isolated and non-continuous, are, I believe, of little or of no value.

I take the period 1873-1902—the thirty most recent years for which the facts are known—and I group the facts in three periods of ten years each. Table A contains the condensed results based upon the facts which are set out in detail on p. 97 of the "fiscal" blue-book.

We may note that the straight run of thirty years dealt with in Table A excludes the year 1872 (which was a year of maximum exports whose amount was not again reached until the year 1890), and that this period includes the three years of high exports—1900, 1901, 1902.

<sup>1</sup> The following statements in regard to British exports of coal are made by me independently of Mr. D. A. Thomas's valuable paper published in the September, 1903, number of the *Journal*, which I had not seen prior to the setting out of the facts now shown. However, as the present statements are deemed worthy of space in the *Journal*, I may say that my arrangement of the facts covers the three ten-yearly periods 1873-82, 1883-92, and 1893-1902, a grouping that differs materially from that adopted in Mr. Thomas's much more comprehensive paper.—J.H.S.

TABLE A.—*Our Exports of British Produce, distinguishing COAL, during the Thirty Years 1873-1902.*

[Millions sterling.]

During each Period of Ten Years.	Exports of British Produce (excluding Ships).*		
	Exports of COAL.†	Exports other than Coal.	Total British Exports.
	Million £'s.	Million £'s.	Million £'s.
1873-82 .....	93	2,108	2,201
Increase .....	40	101	141
1883-92 .....	133	2,209	2,342
Increase .....	84	28	112
1893-1902 .....	217	2,237	2,454
Total .....	443	6,554	6,997

\* Exports of ships cannot be included, as they were not recorded previous to 1899. Their export value during 1899-1902 was 33,000,000*l.*

† These do not include bunker coal or products of coal.

The very large growth in our coal exports stands out prominently from Table A. During 1873-82 these coal exports were 93,000,000*l.* (9·3 million £ per year), and during 1893-1902 our coal exports rose to 217,000,000*l.* (21·7 million £ per year).

If we look at the "increase" figures in Table A for coal, and for exports other than coal, respectively, we see some rather remarkable results.

During 1883-92, as compared with 1873-82, our coal exports increased by 40,000,000*l.*, and our exports other than coal increased by 101,000,000*l.*

But during 1893-1902, as compared with 1883-92, our exports of coal increased by 84,000,000*l.*, and our exports other than coal increased by only 28,000,000*l.* I may say here that even this small increase of 28,000,000*l.* in our exports other than coal was caused by the increase in our exports of machinery and mill-work during 1893-1902—an increase of 36,000,000*l.* So that without this increase in our exports of machinery, our exports other than coal and machinery actually decreased by 8,000,000*l.* during 1893-1902, as compared with 1883-92.

It is instructive now to look at the percentage of our coal exports upon our total exports during each of the three ten-yearly periods now under observation. These results are shown in Table B.

TABLE B.—*Percentage of our Exports of COAL upon our Total Exports of British Produce, 1873-1902.*

During each Period of Ten Years.	British Exports.		Percentage of Coal Exports on Total Exports.
	Coal Exports.	Total Exports.	
	Million £'s.	Million £'s.	Per cent.
1873-82 .....	93	2,201	4·2
'83-92 .....	133	2,342	5·7
'93-1902 .....	217	2,454	8·8

We see that during these thirty years our exports of coal have greatly increased their importance relatively to our total exports—from 4·2 per cent. during 1873-82 to 8·8 per cent. during 1893-1902. And if we ascertain the facts for the last three years, 1900-02, we shall find that our coal exports averaged no less than 11·6 per cent. of our total exports during 1900-02.

These exports of coal are exports of irreplaceable raw material (of the nature of national capital), as distinguished from exports of the finished product of our industry. And if we compare the rate of growth in our coal exports with the rate of growth in our exports other than coal, we obtain the significant results shown in Table C.

TABLE C.—*The Rate of Growth in our Exports of COAL, compared with the Rate of Growth in our Exports other than Coal, 1873-1902.*

During each Period of Ten Years.	Our Exports of COAL.		Our Exports other than Coal.	
	Export Value.	Rate of Growth, taking the Exports during 1873-82 as equal to 100.	Export Value.	Rate of Growth, taking the Exports during 1873-82 as equal to 100.
	Million £'s.	Per cent.	Million £'s.	Per cent.
1873-82.....	93	100	2,108	100
'83-'02.....	133	143	2,209	105
'93-1902.....	217	233	2,237	106

Table C shows that for every 100*l.* of coal exported by us during 1873-82, we exported 143*l.* during 1883-92, and 233*l.* during 1893-1902.

The corresponding results in regard to our exports other than coal being 100*l.* during 1873-82, 105*l.* during 1883-92, and 106*l.* during 1893-1902.

Thus, during the whole period, our exports of coal increased by 133 per cent., and our exports other than coal increased by only 6 per cent.

We have already seen in Table A, that, comparing 1893-1902 with 1883-92, our exports of coal actually increased by 84,000,000*l.* sterling, or by just three times as much as the increase in all our exports other than coal—28,000,000*l.* sterling.

The foregoing facts, condensed as they are into three periods of ten years each, show very plainly that our exports of coal—exports of capital, that is to say—have attained an undue prominence as compared with our exports other than coal (exports of industry). This unsatisfactory result is further evidenced if we compare our exports of coal and our exports other than coal with our imports during each of the three periods now under observation.

While I wish to avoid any controversial topic, it may be permissible to say in this connection that there is a tendency to regard as unimportant the efficient maintenance of our export trade, on the score that our exports, visible and invisible, do, in any case, pay for

our imports. I will not enter upon the vexed question as to whether our imports are still wholly paid for by our exports, visible and invisible, but it may be well to quote the following words from Sir Courtney Boyle's memorandum dated January 16th, 1897. [White paper, C-8322, p. 29]:—"It is necessary, therefore, more than ever, that attention should be given in the United Kingdom to the business of manufacturing for export."

TABLE D.—Our IMPORTS compared with our Exports of Coal-Capital and with our Exports other than Coal, 1873-1902.

During each Period of Ten Years.	Our IMPORTS.* (A.)	Our Exports of British Produce.		The Percentage of our IMPORTS (A) which were Paid for as follows:			
		Exports of COAL. (B.)	Exports other than Coal. (C.)	By Exports of Coal (B).	By Exports other than Coal (C).	By Other Modes of Payment.	Total.
	Min. £'s.	Min. £'s.	Min. £'s.	Per cent.	Per cent.	Per cent.	Per cent.
1873-82 ....	3,838	93	2,108	2·4	54·9	42·7	100·0
'83-92 ....	3,995	133	2,209	3·3	55·3	41·4	100·0
'93-1902	4,652	217	2,237	4·7	48·1	47·2	100·0

\* These are our total imports of merchandise, not including bullion and specie.

We see in Table D that whereas during 1873-82 only 2·4 per cent. of our imports were paid for by exports of coal capital, this mode of paying for our imports rose to 4·7 per cent. during 1893-1902.

We also see that during 1873-82 we paid for 55 per cent. of our imports by exports of British produce other than coal, and that during 1893-1902 this mode of payment fell to only 48 per cent.

The "other modes of payment" for our imports rose from 42·7 per cent. during 1873-82 to 47·2 per cent. during 1893-1902. Omitting minor ways of payment for our imports, these "other modes of payment" in Table D mean, in theory, our earnings as a sea-carrier, and interest in our investments in foreign and colonial countries, both of which items come to us in the form of imports. But there is another practicable mode of payment for our imports included with these "other modes of payment" in Table D, namely, by realisation of our invested capital. There is reason to believe that of late years, and to some extent, this unsound way of paying for our exports has become operative.

In this connection the following words of Sir Alfred Bateman, quoted from p. 14 of blue-book Cd.-1199 (May, 1902), may be noted:—

" . . . . . it has been alleged, and probably with good reason, that the United States have been re-purchasing American securities in European markets to a large extent in recent years, and principally in the United Kingdom."

The facts that have now been shown, broadly-based as they are, and free from the selection of this or that year, should cause us to

be chary in asserting that we are not paying for some of our vast imports out of capital. I am unable to avoid the conclusion that we have been, and are, living to some extent upon our capital—not wholly upon our yearly earnings.

## II.—Prices of Commodities in 1903. By A. SAUERBECK.

THE following table shows the course of prices of forty-five commodities during the last twenty years as compared with the standard period of eleven years, 1867-77, which in the aggregate is equivalent to the average of the twenty-five years 1853-77 (see the *Society's Journal*, 1886, pp. 592 and 648, and 1893, pp. 220 and 247).

*Summary of Index Numbers. Groups of Articles, 1867-77 = 100.*

	Vegetable Food (Corn, &c.).	Animal Food (Meat, &c.).	Sugar, Coffee, and Tea.	Total Food.	Minerals.	Textiles.	Sundry Materials.	Total Materials.	Grand Total.	Silver.*	Wheat Harvest.†	Average Price of Consols.‡	Average Bank of England Rate.‡
1884 .....	71	97	63	79	68	68	81	73	78	83.3	103	101	3
'85 .....	68	88	63	74	66	65	76	70	72	79.9	108	99½	3
'86 .....	65	87	60	72	67	63	69	67	69	74.6	93	100½	3
'87 .....	64	79	67	70	69	65	67	67	68	73.3	110	101½	3½
'88 .....	67	82	65	72	78	64	67	69	70	70.4	96	101	3½
1889 .....	65	86	75	75	75	70	68	70	72	70.2	103	98	3½
'90 .....	65	82	70	73	80	66	69	71	72	78.4	106	96½	4½
'91 .....	75	81	71	77	76	59	69	68	72	74.1	108	95½	3½
'92 .....	65	84	69	73	71	57	67	65	68	65.4	91	96½	2½
'93 .....	59	85	75	72	68	59	68	65	68	58.6	90	98½	3½
1894 .....	55	80	65	66	64	53	64	60	63	47.6	106	101	2½
'95 .....	54	78	62	64	62	52	65	60	62	49.1	91	106½	2
'96 .....	53	73	59	62	63	54	63	60	61	50.5	116	111	2½
'97 .....	60	79	52	65	66	51	62	59	62	45.3	100	112½	2½
'98 .....	57	77	51	68	70	51	63	61	64	44.3	120	111	3½
1899 .....	60	79	53	65	92	58	65	70	68	45.1	113	107	3½
1900 .....	62	85	54	69	108	66	71	80	75	46.4	99	99½	4
'01 .....	62	85	46	67	89	60	71	72	70	44.7	106	94	3½
'02 .....	63	87	41	67	82	61	71	71	69	39.6	113	94½	3½
'03 .....	62	84	44	66	82	66	69	72	69	40.7	104	90½	3½
Average													
1864-1903	60	81	53	66	78	57	66	66	68	45.3	107	102½	3½
'88-97....	62	81	66	70	70	59	66	65	67	61.0	101	101½	2½
'84-93....	66	85	68	74	72	64	70	69	71	72.8	101	99	3½
'78-87....	79	95	76	84	73	71	81	76	79	82.1	97	99½	3½

\* Silver 60¾d. per oz. = 100.

† Wheat harvest in the United Kingdom, 29 bushels = 100.

‡ Consols and bank rate actual figures, not index numbers; consols 2½ per cent. from 1889, 2½ per cent. from April, 1903.

The index number of all commodities was 69 last year, or the same as for the preceding year, though a more exact calculation with a decimal added would have made it 69·5 in both years. It was about 31 per cent. below the standard period 1867-77, and 12½ per cent. below the ten years 1878-87, but about 5 per cent. above the average of the last ten years.

Minerals were on the average unchanged last year; corn, animal food products, and sundry materials were somewhat lower, but textiles, sugar, and tea higher.

The monthly fluctuations were as follows:—

December, 1889...	73·7	December, 1901....	68·4	June, 1903...	69·5
February, '95...	60·0	" " '02....	69·1	July, " ....	69·5
July, '96....	59·2	January, '03...	69·5	August, " ....	70·0
December, '98...	63·8	February, " ....	70·2	September, " ....	69·1
" '99...	72·3	March, " ....	70·4	October, " ....	69·0
July, 1900....	76·2	April, " ....	69·4	November, " ....	69·0
December, " ....	73·4	May, " ....	69·6	December, " ....	70·0

Prices in the aggregate, as illustrated by the index numbers, have only experienced slight variations in the course of the year, though the movements of some particular commodities have been more important.<sup>1</sup>

Taking articles of food and materials separately, the index numbers compare thus (1867-77 = 100):—

	Average.			Dec., 1899.	Feb., 1895.	July, 1896.	Feb., 1900.	Dec., 1901.	Dec., 1902.	Dec., 1903.
	1878-87.	1884-93.	1894-1903.							
Food .....	84	74	66	73·1	63·8	60·0	65·8	66·1	66·2	65·3
Materials	76	69	66	74·2	57·0	58·6	81·9	70·0	71·8	73·4

Articles of food were about 1½ per cent. lower, materials 3 per cent. higher than in December, 1902.

The position of the six separate groups of commodities at the end of the last three years in comparison with whole periods, is illustrated by the following index numbers (1867-77 = 100):—

	Average.			Dec., 1901.	Dec., 1902.	Dec., 1903.	Last Year, per Cent.
	1878-87.	1884-93.	1894-1903.				
Vegetable food, corn, &c. ....	79	66	60	63·2	61·9	61·6	—
Animal food (meat and butter) ....	95	85	81	83·1	84·7	80·7	fall 5
Sugar, coffee, and tea	76	68	53	42·0	42·2	45·7	rise 8
Minerals .....	73	72	78	80·6	82·3	82·0	—
Textiles.....	71	64	57	58·2	62·1	70·5	rise 13
Sundry materials.....	81	70	66	71·8	70·9	70·1	fall 1

<sup>1</sup> In January, 1904, the index number was 70·4, and in February 70·8.

Corn shows scarcely any change. English wheat was affected by the inferior quality of the new crop, while best flour and foreign wheat maintained their values, and ruled on the average a little higher than in the previous year; barley, oats, and maize were all lower, but potatoes and rice were higher. Beef, pork, and bacon were appreciably cheaper than in the high year 1902, but mutton improved to some extent. At the close of 1903 animal food products stood about on a par with the average of the last decade. The average price of beet sugar in 1903 was 8s. 3d. per cwt. f.o.b. against 6s. 9d. in 1902, and 9s. 6d. in the decade 1894-1903; of Java 9s. 9d. per cwt. against 8s. 6d. and 11s. 6d., of French loaves 11s. 9d. per cwt. f.o.b., against 10s. and 12s. 9d. respectively; at the end of the year beet sugar was worth 8s. 5d. per cwt. f.o.b., against 8s. 2d. in 1902. Coffee was on the average a little lower than in the previous year; the Santos standard opened at 26s. per cwt., touched 24s. in June, the lowest on record, improved since August, and closed at 35s. per cwt. Tea ruled about  $\frac{1}{2}$ d. per lb. higher.

Iron had only moderate fluctuations, but realised on the average less than in 1902; the closing quotations were 49s. 9d. per ton for Scotch pig against 53s. 3d. at the end of 1902, and 42s. 7d. for Middlesborough against 46s. 5d. Both copper and tin were dearer, the former being manipulated by America. Copper closed at 56 $\frac{1}{2}$ l. per ton against 52 $\frac{3}{4}$ l.; tin at 132 $\frac{3}{4}$ l. per ton against 120 $\frac{1}{2}$ l. at the end of 1902. Best house coal in London declined from 19s. per ton in December, 1902, to 17s., but the average export value of coal for the whole year was only 8d. cheaper, viz., 11s. 8d. per ton against 12s. 4d. in 1902, 13s. 10d. in 1901, and 16s. 9d. in 1900. The December index number for minerals combined was still well above the average of the last twenty-six years. Among textiles there were violent fluctuations for cotton; American rose from 4'64d. per lb. to 7'12d. in June, dropped to 5'74d. in October, touched 7'50d. on 29th December, the highest since 1880, and closed at 6'96d.<sup>2</sup> Flax had a strong rise during the last quarter, jute sold on the average above 1902, but hemp was cheaper. Wool, particularly the coarser qualities, and silk were dearer on the average owing to smaller supplies. Among "sundry materials" linseed oil and tallow were considerably cheaper; petroleum, though much higher during the last quarter than in the early part of the year, was on the average about on a par with 1902; indigo remained very depressed, while other sorts call for little comment.

The quarterly numbers show the average of three monthly figures, and by thus eliminating minor fluctuations they give a more reliable comparison of the gradual changes of the various groups of commodities. Last year's figures indicate the fall of corn and animal food in the last quarter, the gradual decline of minerals, and the steady advance of textiles and of the group of sugar, coffee, and tea.

<sup>2</sup> The price reached 9d. on 2nd February, 1904, the highest since 1873; declined during the next few days, until it reached 6'94d. on 10th February. After fresh fluctuations, the closing quotation at the end of February was 8d. per lb.

**Quarterly Movements of Prices.\***  
**Summary of Index Numbers, 1867-77 = 100.**

Years.	Quar- ters.	Vege- table Food (Corn, &c.).	Animal Food (Wheat, &c.).	Sugar, Coffee, and Tea.	Total Food.	Mine- rals.	Tex- tiles.	Sundry Mate- rials.	Total Mate- rials.	Grand Total.	Silver.†
1889....	IV	66.3	86.0	67.2	73.1	83.9	70.7	68.1	73.2	73.2	71.4
'98....	IV	62.4	76.8	52.3	65.6	75.0	50.4	63.3	62.5	63.8	45.5
	I	61.4	78.8	53.2	66.0	83.7	52.8	62.6	65.3	65.6	45.1
	II	59.1	79.8	54.5	65.8	89.2	54.6	62.0	67.1	66.5	46.3
	III	59.4	79.6	53.7	65.6	96.3	57.5	64.4	70.9	68.6	44.9
	IV	59.6	77.4	53.6	64.8	98.8	68.7	68.7	76.8	71.8	44.5
	I	60.2	80.2	53.4	66.2	107.9	70.6	72.1	81.3	74.9	45.3
	II	62.3	87.5	55.0	70.0	108.6	65.4	71.4	79.6	75.6	45.6
	III	64.0	86.1	55.9	70.5	111.0	64.5	71.1	79.8	75.9	47.0
	IV	63.7	85.3	52.3	69.3	105.5	60.9	71.5	77.4	74.0	48.8
	I	62.5	87.4	48.6	68.7	94.0	60.3	70.6	73.7	71.6	45.7
	II	63.4	85.2	46.5	67.9	83.5	59.5	70.9	72.1	70.3	44.9
	III	61.5	85.8	43.8	66.7	86.7	59.6	71.1	71.7	69.6	44.3
	IV	62.3	84.1	42.3	66.1	83.9	58.2	72.2	71.0	69.0	42.6
	I	62.0	84.3	41.3	65.8	82.2	59.6	72.8	71.3	69.0	41.5
	II	63.5	90.5	39.6	68.5	83.2	60.3	72.7	71.7	70.3	39.2
	III	63.2	89.2	39.2	67.7	82.6	61.7	70.3	71.0	69.6	39.6
	IV	61.9	84.9	41.7	66.1	82.3	61.7	70.1	70.8	68.8	37.0
	I	61.6	86.9	42.6	67.0	85.7	63.7	70.2	72.4	70.0	36.6
	II	62.5	84.1	42.9	66.4	82.9	65.6	69.2	71.8	69.5	40.1
	III	61.0	85.0	43.2	67.3	81.0	65.9	68.7	71.2	69.5	43.6
	IV	61.7	81.7	45.1	65.6	80.3	67.9	69.9	72.1	69.3	43.8

\* The four quarterly figures of each year do not in all cases exactly (in the decimals) agree with the annual averages, as the latter are partly calculated from revised figures. See also the *Society's Journal*, 1893, p. 221; 1895, p. 144; and 1901, p. 90.

† Silver 60.84d. per oz. = 100.

The following figures show in each case the average index numbers of all the forty-five commodities for ten years (see the dotted line in the diagram of the *Journal*, 1886, and also the *Journal*, 1893, p. 220); they give the best picture of the gradual movement of the average prices of whole periods, as the ordinary fluctuations are still further obliterated:—

1818-27 = 111	1881-90 = 75	1888-97 = 67
'28-37 = 93	'82-91 = 74	'89-98 = 66
'38-47 = 93	'83-92 = 72	'90-99 = 66
'43-57 = 89	'84-93 = 71	'91-1900 = 66
'58-67 = 99	'85-94 = 69	'92- '01 = 66
'68-77 = 100	'86-95 = 68	'93- '02 = 66
'78-87 = 79	'87-96 = 68	'94- '03 = 66

From the decade 1889-98 the average of ten years has constantly remained 66.

*Silver.*—The average price was 24½d. per oz. against 24¼d. in 1902, and 27¾d. in 1901. It stood at 22¼d. per oz. (index number 36.6) at the end of 1902, and touched again 21½d. (index number 35.6) in January, the lowest record of the previous years. Thanks



to considerable purchases by the United States for the Philippine coinage (about 12,000,000 oz.), by France for her Eastern possessions (about 8,000,000 oz.), and towards the end of the year for the Indian Mint (about 20,000,000 oz.), the price rose to over 24*d.* in April, to over 26*d.* in August, and touched 28½*d.* in October. The metal realised about 27*d.* in November, and closed at 26½*d.* per oz. (index number 42·9). It is generally expected that India will continue to buy for some time still, and the price will be kept up so long as an extra demand exists.

*Gold.*—The production in 1899 was estimated at 63,000,000*l.*, in 1900 at 52,000,000*l.*, in 1901 at 54,000,000*l.*, in 1902 at 62,500,000*l.*, and the total in 1903 was probably about 67,500,000*l.*

The *rate of discount* in the three principal markets is shown in the following table :—

[Per cent. and two decimals.]

	London.		Paris.		Berlin.		Average of the Three Markets.	
	Bank Rate.	Market Rate.	Bank Rate.	Market Rate.	Bank Rate.	Market Rate.	Bank Rate.	Market Rate.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1895 .....	2·00	0·80	2·10	1·59	3·14	2·02	2·41	1·47
'96 .....	2·50	1·40	2·00	1·75	3·66	2·99	2·72	2·05
'97 .....	2·60	1·80	2·00	1·81	3·81	3·09	2·80	2·23
'98 .....	3·25	2·60	2·20	2·07	4·27	3·55	3·24	2·74
'99 .....	3·75	3·25	3·06	2·96	5·04	4·45	3·95	3·55
1900 .....	4·00	3·70	3·25	3·17	5·33	4·41	4·19	3·76
'01 .....	3·75	3·14	3·00	2·48	4·10	3·06	3·62	2·89
'02 .....	3·30	2·96	3·00	2·43	3·32	2·19	3·21	2·53
'03 .....	3·75	3·24	3·00	2·82	3·84	3·00	3·53	3·02

The average rates in 1895 were the lowest on record, those in 1900 were the highest since 1873. After a reduction in 1901 and 1902, last year's market rates were on the average again ½ per cent. higher than in 1902.

The year 1903 can hardly be called a satisfactory one. It was free from actual crises, but nearly all the more important industries, especially in this country, found reasons for complaints. Agriculture suffered greatly from the weather, the year having been the wettest on record, and the harvest was not only generally deficient, but the product was damp and inferior, and had to be sold at lower prices, or was not marketable at all. The iron trade and the engineering and shipbuilding industries were not satisfactory, and shipping freights were very depressed. The great cotton industry was seriously affected by the disturbing influence of the American speculations and the gambling in futures, and the position of manufacturers was a very difficult one in the face of constant fluctuations and high prices. The wool trade was only partly prosperous, and the total consumption showed a falling off. The linen and jute industries were unsatisfactory. Employment was still worse than in the preceding year, particularly in the second

half. A redeeming feature is to be noticed in the external trade of the country. The total—leaving out the precious metals—exceeded 90,3,000,000*l.*, and was both in value and quantity far beyond any previous experience. The exports of manufactures, taken separately, also exceeded any previous record. There was an increased demand for South America, South Africa, and India, but a decrease to Australia, China, and Japan. The total compares with about 548,000,000 last year, the record of Germany, and with about 510,000,000*l.*, the record of the United States in 1903.

The conditions in the United States have greatly changed, but it is astonishing that the depression after the enormous “boom” has not been more serious. In Germany business has been gradually improving, and the employment of the working classes is better, but the real improvement is probably not yet so great as the bourses would like to make people believe.

As to the production of commodities, we have to mention sufficiently large corn crops of the world; the deficiency in several European countries having been balanced by ample and even extraordinary supplies in other quarters, and large sugar and coffee crops. The production of iron was greater than ever: in the United States 18,000,000 tons, in Germany 10,000,000 tons, and in the United Kingdom about 8,500,000 tons. It is remarkable that of iron the United States alone produce now as much as the total world's supply only twenty-three years ago (1880), while in the great years 1872 and 1873 the world's production was only about 14,500,000 tons. Last year's total production must have exceeded 45,000,000 tons! The American cotton crop is estimated between under 10,000,000 and over 11,000,000 bales, and according to the more or less credited estimates the article is tossed about, the lower figure being an insufficient supply, the higher figure representing about the quantity required. The production of wool, which was much reduced last year, will show a further shortage.

The Stock Exchange had a great fall for home and American rails, and a flat market for mining shares; but the feature of the year was the continued depression of gilt-edged securities, owing to the great increase in the debts of the State and municipalities which are not yet digested. Consols declined from 93 to 88, while French Three per Cent. Rente was worth in Paris 99·5 at the end of 1902 and 97·1 at the end of 1903, the lowest price since 1894. German Three per Cents. in Berlin, which had been as low as 84·9 in 1900, were quoted at 91·7 at the end of 1902, and 91·8 at the close of last year.

Of other events there are still to be mentioned the tariff discussion in this country, which can only have been harmful to general business, the unsettled conditions in the Near East, and, towards the end of the year the clouds on the Far Eastern horizon. The war between Russia and Japan has since broken out, but it is as yet impossible to say what effect it will have on trade generally; it has no doubt caused a feeling of uncertainty, and will make people cautious, but apart from this the prospects of the year ought to be fairly good, as the large crops in Argentina, the greater

purchasing power of India, and the recovery of Australia, should go far to increase the demand for European manufactures.

The arithmetical mean of the forty-five index numbers, which is 69 (the same as in 1902), has, as in former years, again been subjected to two tests :—

*Firstly*, by using the same index numbers of the separate articles, but calculating each article according to its importance in the United Kingdom on the average of the three years 1899-1901, when the mean for 1903 is 69·1, against 70·0 in 1902; or, on the average of the five years 1871-75, when the mean for 1903 is 68·6, against 69·0 in 1902.

*Secondly*, by calculating the quantities in the United Kingdom at their actual values (the production on the basis of my price tables, the imports at Board of Trade values, and consequently a considerable portion according to a different set of prices) and at the nominal values on the basis of the average prices from 1867-77. In this case the mean is 71·0, against 71·6 in 1902.

The figures for 1902 and 1903 are higher in this calculation than the ordinary index numbers, and this is principally due to the high export price of coal, but partly also to the declared values of imports having been rather higher than market prices. Coal is an article of enormous importance in this country, and if the quantity is taken into consideration it must have a very great influence on such calculations. In the second test the calculation was only on the basis of the export prices, while in the first test the mean between the two index numbers for export prices and for London house coal was taken. As the mean is lower than the number for exports only, the influence was naturally smaller in the first test.

The following table gives the figures which have served for the second test (see also the *Society's Journal*, 1886, pp. 613—19) :—

*Movements of Forty-five Commodities in the United Kingdom (Production and Imports).*

	Estimated Actual Value in each Period.	Nominal Values at Average Prices of 1867-77, showing Increase in Quantities.	Movement of Quantities,		Movement of Quantities from Period to Period.	Ratio of Prices according to this table, 1867-77 = 100.
			1848-50 = 100	1871-75 = 100.		
	Mln. £'s and dec.	Mln. £'s and dec.				
Ave. 1848-50...	219·8	294·8	100	56	—	74·6
" '59-61....	350·1	382·7	130	73	30% over 1849	91·5
" '69-71....	456·6	484·6	164	92	27% " '60	94·2
" '71-75....	548·8	526·8	178	100	—	104·3
" '74-76....	537·8	538·4	183	102	—	99·9
" '79-81 ..	489·7	578·5	196	110	19% over 1870	84·6
" '84-86....	445·7	610·1	207	116	—	73·0
" '89-91....	504·1	685·2	233	130	18% over 1880	73·6
" '94-96 ..	453·7	723·5	245	137	—	62·7
" '99-1901	562·2	775·5	263	147	13% over 1890	72·5
1902 .....	562·7	785·5	266	149	} 1% over 1900 {	71·6
'03* .....	555·9	783·0	266	149		71·0

\* 1903 subject to correction after publication of the complete mineral produce returns.

The nominal values at the uniform prices of 1867-77 show the exact movements of quantities in the aggregate. Last year's total is slightly less than in the previous year. The increase on 1889-91 amounts to 14 per cent., and it is 49 per cent. on 1871-75, and 166 per cent. on 1848-50.

The price movements of the external trade of this country—total imports into the United Kingdom and exports of British and Irish produce—were as follows, 1873 called 111 in accordance with my index number:—

	Total Imports into United Kingdom and Exports of British and Irish Produce.			Ratios. 1873 = 111.	
	Declared Value.	Value at Prices of Preceding Year.	Value* at Prices in 1873.	British Trade.	My Arithmetical Index Numbers.
	Mln. £'s.	Mln. £'s.	Mln. £'s.		
1873 ....	626'0	—	626	111'0	111
'83 ....	667'0	—	861	86'0	82
'84 ....	623'0	—	844	81'9	76
'85 ....	584'0	—	835	77'7	72
'86 ....	562'5	—	858	72'8	69
'87 ....	583'3	588'6	898	72'1	68
'88 ....	620'3	609'4	938	73'4	70
'89 ....	675'3	664'5	1,005	74'6	72
'90 ....	684'4	672'7	1,001	75'9	72
'91 ....	683'0	684'8	1,001	75'7	72
'92 ....	651'0	681'4	999	72'3	68
'93 ....	623'6	635'7	976	70'9	68
'94 ....	624'7	666'5	1,043	66'5	63
'95 ....	642'9	666'6	1,112	64'1	62
'96 ....	681'7	671'5	1,162	65'1	61
'97 ....	685'6	689'5	1,176	64'7	62
'98 ....	704'0	703'1	1,201	64'8	64
'99 ....	749'7	724'7	1,241	67'1	68
1900 ....	815'1	789'1	1,224	73'9	75
'01 ....	802'7	836'9	1,256	70'9	70
'02 ....	812'4	831'9	1,302	69'3	69
'03 ....	833'8	826'5	1,323	69'9	69

\* 1883-86 calculated by the Board of Trade ("Report on Recent Changes in the Prices of Exports and Imports, 1888"), 1887-1903, nominal figures in proportion with the ratio in the next column. This ratio is based on the figures in the first two columns, published by Mr. S. Bourne and the *Economist*, showing the trade movements and variations in value from year to year, viz., values as returned and calculated at prices of previous year (1887—583'3 : 72'7704 = 588'6 : 72'1152 ; 1888—620'3 : 72'1152 = 609'4 : 73'4051, &c.).

In the above statement all figures previously published are repeated, as they may be of special interest for the tariff discussion. The third column at uniform prices shows the movements of quantities, and it will be seen that since 1873, a year in which the external trade was already unusually heavy, the total quantities have more than doubled. The ratio of prices in this calculation is 69'9 for 1903, against my index number of 69 (or more exactly 69'5).

The influence of coal is much smaller in this table, which comprises only the exports—46,600,000 tons—than in the other calculation, which comprises the total production—about 230,000,000 tons.

*Construction of the Tables.*

The Table of *Index Numbers* is based on the average prices of the eleven years 1867-77, and the index numbers have been calculated in the ordinary arithmetical way; for instance, English wheat:—

	<i>s.</i>	<i>d.</i>	
Average, 1867-77....	54	6	= 100, average point.
„ '55 .....	74	8	= 137, or 37 per cent. above the average point.
„ 1903 .....	26	9	= 49, „ 51 „ below „

The index numbers therefore represent simple percentages of the average point.

Certain articles which appear to have something in common have been grouped together, with the following result:—

		Example for 1903.	
		Total Numbers.	Average.
1. Vegetable food, corn, &c. (wheat, flour, barley, oats, maize, potatoes, and rice) .....	With 8 Index Nos.	499	62
2. Animal food (beef, mutton, pork, bacon, and butter) .....		588	84
3. Sugar, coffee, and tea .....		174	44
1-3. Food .....		1,261	66
4. Minerals (iron, copper, tin, lead, and coal) .....	„ 7 „	576	82
5. Textiles (cotton, flax, hemp, jute, wool, and silk) .....		526	66
6. Sundry materials (hides, leather, tallow, oils, soda, nitrate, indigo, and timber) .....		765	69
4-6. Materials .....		1,867	72
General average .....	„ 45 „	3,128	69

The *general average* is drawn from all forty-five descriptions, which are treated as of equal value, and is the simple arithmetical mean as shown above.

## Average Prices of Commodities.\*

No. of Article } Year.	0	1	2	3	4	5	6	7	8	1-8	9
		Wheat.		Flour.	Barley.	Oats.	Maize.	Potatoes.*	Rice.		Beef.†
	Silver.† d. per oz.	English Gazette s. and d. per qr.	American. s. and d. per qr.	Town Made White. s. per sack (280 lbs.).	English Gazette. s. and d. per qr.	English Gazette. s. and d. per qr.	American Mixed. s. per qr.	Good English. s. per ton	Rangoon Cargoes to Arrive. s. and d. per cwt.	Vegetable Food. Total.	Prime. d. per 8 lbs.
1889 .....	42½	29'9	35	29	25'10	17'9	20	80	7'3	—	47
'90 .....	47½	31'11	35'6	29	28'8	18'7	20	70	7'3	—	47
'91 .....	45½	37	40	33	28'2	20	28	92	7'11	—	47
'92 .....	39½	30'3	33	28	26'2	19'10	21½	70	7'8	—	47
'93 .....	35½	26'4	27'6	26	25'7	18'9	20	65	6'2	—	48
1894 .....	28½	22'10	23'6	22	24'6	17'1	20	70	5'10	—	47
'95 .....	29½	23'1	25'6	23	21'11	14'6	19½	80	5'6	—	47
'96 .....	30½	26'2	29	25	22'11	14'9	15	55	6'2	—	45
'97 .....	27½	30'2	34'6	30	23'6	16'11	14½	70	6'9	—	47
'98 .....	26½	34	37	33	27'2	18'5	17½	82	7'2	—	46
1899 .....	27½	25'8	30	26½	25'7	17	18	70	7'2	—	49
1900 .....	28½	26'11	31'6	27½	24'11	17'7	20½	78	7'4	—	51
'01 .....	27½	26'9	30	26½	25'2	18'5	22½	78	6'7	—	49
'02 .....	24½	28'1	30'6	26	25'8	20'2	25	69	6'2	—	54
'03 .....	24½	26'9	31	27	22'8	17'2	22	84	7'3	—	48
Average..											
1894-1903	27½	27	30	26½	24½	17½	19½	74	6½	—	48½
'88-97...	37	29	32	27½	25½	17½	20½	73	6½	—	47
'78-87...	50	40	43½	34½	31½	21	25	102	8	—	55½
'67-77...	58½	54½	56	46	39	26	32½	117	10	—	59

## Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.

1889 .....	70'2	55	63	63	66	69	61	69	72	518	80
'90 .....	78'4	59	63	63	73	72	61	60	72	523	80
'91 .....	74'1	63	71	72	72	77	86	79	79	604	80
'92 .....	65'4	56	59	61	67	76	67	60	77	523	80
'93 .....	58'6	48	50	54	66	72	61	56	62	469	81
1894 .....	47'6	41	42	48	63	66	61	60	58	439	80
'95 .....	49'1	42	46	50	56	56	60	68	55	433	80
'96 .....	50'5	48	52	54	59	57	46	47	62	425	76
'97 .....	45'3	55	62	65	60	65	45	61	67	480	80
'98 .....	44'3	62	66	72	70	71	55	70	72	538	78
1899 .....	45'1	47	54	58	66	65	55	60	72	477	83
1900 .....	46'4	49	56	60	64	68	62	67	73	499	86
'01 .....	44'7	49	54	58	65	71	68	67	66	498	83
'02 .....	39'6	52	54	56	66	78	77	59	62	504	92
'03 .....	40'7	49	55	59	59	66	67	72	72	499	81

\* The annual prices are the averages of twelve monthly or fifty-two weekly quotations; potatoes of eight monthly quotations, January to April and September to December.

† Index numbers of silver as compared with 60'84d. per ounce being the parity between gold and silver at 1 : 15½; not included in the general average.

‡ Meat (9-13), by the carcase, in the London meat market.

## Average Prices of Commodities—Contd.

No. of Article }	10	11	12	13	14	15	9-15	16A	16B	17	18A*	18B*
	Beef.	Mutton.		Pork.	Bacon.	Butter.		Sugar.			Coffee.	
Year.	Mid- dling.	Prime.	Mid- dling.	Large and Small, Average.	Water- ford.	Fris- land, Fine to Finest.	Animal Food. Total.	British West Indian Refining.	Beet, German, 88 p. c., f.o.b.	Java, Floating Cargoes.	Ceylon Plan- tation, Low Mid- dling.	Rio, Good Channel.
	d. per 8 lbs.	d. per 8 lbs.	d. per 8 lbs.	d. per 8 lbs.	s. per cwt.	s. per cwt.		s. per cwt.	s. per cwt.	s. per cwt.	s. per cwt.	s. per cwt.
1889 .....	39	63	50	43	66	102	—	16	16½	19	95	76
'90 .....	38	59	45	42	62	100	—	13	12½	15½	101	83
'91 .....	40	53	42	39	63	106	—	13½	13½	15½	101	76
'92 .....	38	53	42	48	68	108	—	13½	13½	16	104	68
'93 .....	39	53	42	50	68	106	—	14½	15	17½	103	81
1884 .....	37	55	42	44	59	98	—	11½	11½	13½	102	75
'95 .....	37	58	44	37	54	93	—	10	10	12	98	74
'96 .....	34	53	39	35	50	98	—	10½	10½	12½	95	58
'97 .....	36	55	41	44	59	94	—	9½	8½	11	95	40
'98 .....	36	52	37	45	58	95	—	9½	9½	11½	92	32
1889 .....	40	54	41	40	51	103	—	10½	10	12½	90	31
1900 .....	42	59	45	44	60	102	—	11½	10½	12½	75	40
'01 .....	42	54	44	49	63	105	—	9½	8½	10½	70	35
'02 .....	47	55	44	48	63	102	—	7½	6½	8½	70	31
'03 .....	42	58	47	44	60	100	—	8½	8½	9½	70	30
Average 1884-1903	39½	55½	42½	43	57½	99	—	9½	9½	11½	86	44½
'88-97.....	37½	56	43½	42	61	100	—	12½	12½	14½	97	70
'78-87.....	46	64½	53	49	71	116	—	17	18	21½	78	52
'67-77.....	50	63	55	52	74	125	—	23	24	28½	87	64

Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.

	78	100	91	88	89	82	603	69	67	*	*
1889 .....	78	100	91	88	89	82	603	69	67	109	119
'90 .....	76	94	82	81	84	80	577	54	54	116	130
'91 .....	80	84	76	75	85	85	565	57	54	116	119
'92 .....	76	84	76	92	92	86	586	58	56	120	106
'93 .....	78	84	76	96	92	85	592	62	61	118	127
1884 .....	74	87	76	85	80	78	560	48	48	117	117
'95 .....	74	92	80	71	73	74	544	48	42	113	116
'96 .....	68	84	71	67	68	78	512	46	44	109	91
'97 .....	72	87	75	85	80	75	554	39	39	109	64
'98 .....	72	84	67	87	78	76	542	40	41	106	50
1889 .....	80	86	75	77	69	82	552	44	43	103	48
1900 .....	84	94	82	85	81	82	594	46	45	86	63
'01 .....	84	86	80	94	85	84	596	38	38	80	55
'02 .....	94	87	80	92	85	82	612	30	30	80	48
'03 .....	84	92	85	85	81	80	588	36	34	80	47

\* Index numbers not included in the general average.

## Average Prices of Commodities—Contd.

No. of Article }	18	18A*	19A*	19	16-19	1-19	20	21	22	—	23
	Coffee.	Tea.			Sugar, Coffee, and Tea.	Food. Total.	Iron.		Copper.		Tin.
Year.	Mean of 18A and 18s.	Ceylon, Common. d. per lb.	Average Import Price. d. and dec. per lb.	Mean of 19A and 19s.	Total.		Scotch Pig. s. and d. per ton	Bars, Common. £ per ton	Chili Bars. £ per ton	English Tough Cake. £ per ton	Straits. £ per ton
1889 .....		4½	10'79	—	—	—	47'9	6½	51	54	93
'90 .....		4½	10'65	—	—	—	49'7	6½	54	59	94
'91 .....		5½	10'70	—	—	—	47'2	5½	51	55	91
'92 .....		4½	10'07	—	—	—	41'10	5½	45	48	93
'93 .....		5½	9'74	—	—	—	42'4	5	44	47	85
1894 .....		4½	9'59	—	—	—	42'8	4½	40	43	68
'95 .....		4½	9'63	—	—	—	44'5	4½	43	46	63
'96 .....		4	9'55	—	—	—	46'10	5	47	50	60
'97 .....		4	9'36	—	—	—	45'4	5½	49	52	62
'98 .....		4½	9'13	—	—	—	47'2	5½	52	55	72
1899 .....		5½	8'82	—	—	—	63'9	7½	74	78	123
1900 .....		5½	8'58	—	—	—	69'4	9	73	77	134
'01 .....		4	7'67	—	—	—	53'9	6½	66	71	118
'02 .....		3½	7'20	—	—	—	54'6	6½	53	57	121
'03 .....		4½	7'69	—	—	—	52'3	6½	58	62	127
Average...											
1894-1903		4½	8½	—	—	—	52	6½	55½	59	95
'88-97...		4½	10½	—	—	—	45	5½	50	53	83
'78-87...		6½	12½	—	—	—	46	5½	55	60	89
'67-77...		11½	17½	—	—	—	69	8½	75	81	105

Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.

		*	*								
1889 .....	114	38	63	50	300	1,421	69	76	68	—	89
'90 .....	123	40	62	51	282	1,382	72	77	72	—	90
'91 .....	118	49	62	56	285	1,454	68	68	68	—	87
'92 .....	113	43	59	51	278	1,387	61	66	60	—	89
'93 .....	123	48	57	53	299	1,360	61	61	59	—	81
1894 .....	117	38	56	47	260	1,259	62	59	53	—	65
'95 .....	115	37	56	47	247	1,224	64	59	57	—	60
'96 .....	100	36	56	46	236	1,173	68	61	63	—	57
'97 .....	86	36	54	45	209	1,243	66	64	65	—	59
'98 .....	78	40	53	46	205	1,285	68	67	69	—	69
1899 .....	75	49	51	50	212	1,241	92	88	99	—	117
1900 .....	74	47	50	49	214	1,307	100	109	97	—	128
'01 .....	67	36	44	40	183	1,277	78	79	88	—	112
'02 .....	64	38	42	38	162	1,278	79	74	71	—	115
'03 .....	63	38	44	41	174	1,261	76	76	77	—	121

\* Index numbers not included in the general average.



## Average Prices of Commodities—Contd.

No. of Article }  Year.	24	25	26	20—26	27	28	29A	29B	30A	30B	31
	Lead.	Coal.		Minerals. Total.	Cotton.		Flax.		Hemp.		Jute.
	English Fig. £ per ton	Wallsend Hetton in London. s. per ton	Average Export Price. s. and dec. per ton		Middling American. d. per lb.	Fair Dholerah. d. per lb.	St. Peters- burg. £ per ton	Russian, Average Import. £ per ton	Manila Fair Roping. £ per ton	St. Peters- burg Clean. £ per ton	Good Medium. £ per ton
1889 .....	13	17½	10'21	—	5½	4½	28	28	50	26	15
'90 .....	13½	19	12'62	—	6	3½	27	26	39	26	13½
'91 .....	12½	19	12'16	—	4½	3½	28	26	32	24	13
'92 .....	10½	18½	11'04	—	4½	3	28	26	28	24	15
'93 .....	9½	19½	9'90	—	4½	3½	34	31½	26	24	13
1894 .....	9½	16½	10'50	—	3½	2½	32	33	22	24	12½
'95 .....	10½	15	9'33	—	3½	2½	26	28	19	25	11
'96 .....	11½	15	8'85	—	4½	3½	26	27	17½	25	12½
'97 .....	12½	15½	8'98	—	3½	3½	24½	27	16	25	11
'98 .....	13½	16½	9'92	—	3½	2½	24	25½	27	25	11
1899 .....	15½	18½	10'72	—	3½	2½	23	24½	41	27	12½
1900 .....	17½	23½	16'75	—	5½	4½	35	30	39	28	14½
'01 .....	12½	20	13'86	—	4½	3½	38	39½	37	27	12½
'02 .....	11½	18½	12'29	—	4½	3½	32	37	43	27	12½
'03 .....	11½	16½	11'70	—	6'03	4½	32	36	36	27	13½
Average....	12½	17½	11½	—	4½	3½	29½	30½	29½	26	12½
1894-1903	12	17½	10½	—	4½	3½	28	28	28½	25	13
'88-97....	14	16½	9	—	6	4½	33	34	35½	26½	15
'67-77....	20½	22	12½	—	9	6½	46	48	43	35	19

Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.

1889 .....	63	80	82	527	66	61	60	97	79
'90 .....	65	86	101	563	67	58	56	82	70
'91 .....	61	86	97	535	52	48	57	72	68
'92 .....	52	84	88	500	46	45	57	67	79
'93 .....	48	89	80	479	51	53	70	64	68
1894 .....	47	75	84	445	42	39	69	59	66
'95 .....	52	68	75	435	43	41	57	56	58
'96 .....	56	68	71	444	48	46	56	55	64
'97 .....	62	72	72	460	43	45	55	53	58
'98 .....	65	76	79	493	37	37	52	67	58
1899 .....	75	84	86	641	40	41	51	87	66
1900 .....	84	107	134	759	61	62	69	86	75
'01 .....	62	91	111	621	53	51	82	82	67
'02 .....	55	84	98	576	54	55	74	90	64
'03 .....	57	75	94	576	67	61	72	81	71

## Average Prices of Commodities—Contd.

No. of Article }  Year.	33A	32B	33	34	27-34	35A	35B	36A	36B	37A	37B
	Wool.			Silk.		Hides.		Leather.		Tallow.	
	Merino, Port Phillip, Average Fleece.	Merino, Adelaide, Average Grease.	English, Lincoln Half Hogs.	Tantilee.	Textiles. Total.	River Plate, Dry.	River Plate, Salted.	Crop Hides.	Average Import.	St. Petersburg, Y.C.	Town.
	d. per lb.	d. per lb.	d. per lb.	s. per lb.		d. per lb.	d. per lb.	d. per lb.	d. per lb.	s. per cwt.	s. per cwt.
1889 .....	17½	8½	11	13½	—	6½	5	13½	15½	38	27
'90 .....	16	7½	11	14	—	5½	5½	13	15½	38	26
'91 .....	14½	6½	9½	13	—	5½	5½	13	14½	40	27½
'92 .....	13	6	8½	12½	—	5½	4½	13	14½	45	27
'93 .....	12½	6	10½	12½	—	5½	4½	13	13½	48	30½
1894 .....	11½	5½	10½	10	—	5½	4½	12½	13½	48	25½
'95 .....	12	5½	12	10	—	7½	6½	13½	13½	48	23
'96 .....	13	6½	11½	10½	—	6½	5½	13½	13½	48	21
'97 .....	12½	6	9½	10½	—	6½	5½	13½	12½	40	20
'98 .....	13½	6½	8½	10½	—	7	6½	13½	13½	40	22
1899 .....	17½	8½	8½	13	—	7½	6½	13½	13½	—	25
1900 .....	15½	7½	7½	13	—	8½	6½	14	13½	—	27½
'01 .....	13	6½	6½	10½	—	7½	6	14	13½	—	28
'02 .....	15	7½	6½	11	—	7½	6½	14	14½	—	32½
'03 .....	16	8½	7½	13½	—	8	6½	14	15½	—	29½
Average 1894-1903	14	6½	8½	11½	—	7½	6	13½	13½	42	25½
'88-97....	14	6½	10½	12	—	6½	5½	13½	14½	43	25½
'78-87....	18½	8½	11½	15	—	8½	6½	15	17	41	35½
'67-77....	21½	9½	19½	23	—	9	7	16	18½	45	45

## Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.

	33A	32B	33	34	27-34	35A	35B	36A	36B	37A	37B
1889 .....	82	56	59	560	70	84	—	72			
'90 .....	76	56	61	526	70	81	—	71			
'91 .....	70	49	57	473	66	81	—	75			
'92 .....	61	44	53	452	63	81	—	80			
'93 .....	60	52	54	472	65	81	—	87			
1894 .....	55	51	43	424	64	78	—	82			
'95 .....	57	61	43	416	84	81	—	79			
'96 .....	62	58	46	435	77	84	—	77			
'97 .....	59	49	45	407	75	84	—	67			
'98 .....	64	44	46	405	82	81	—	69			
1899 .....	83	42	57	467	85	84	—	56			
1900 .....	76	40	57	526	90	87	—	61			
'01 .....	62	35	46	478	84	87	—	62			
'02 .....	72	32	48	489	87	87	—	72			
'03 .....	78	37	59	526	91	87	—	65			

## Average Prices of Commodities—Contd.

No. of Article }	38	39	40A	40B	41	42	43	44	45A	45B	46-45	20-45	1-45
	Oil.			Seeds	Petro- leum.*	Soda.		Indigo.	Timber.				
Year.	Palm.	Olive.	Lin- seed.	Lin- seed.	Refined.	Crystals.	Nitrate of Soda.	Bengal, Good Consum- ing.	Hewn, Average Import.	Sawn or Split, Average Import.	Sundry Mate- rials. Total.	Mate- rials. Total.	Grand Total.
	£ per ton.	£ per ton.	£ per ton.	s. per qr.	d. per gall.	s. per ton	s. per cwt.	s. per lb.	s. per load.	s. per load.			
1889 .....	25	35	20	42	5½	51	9½	4½	47	49	—	—	—
'90 .....	27	41	23	43	5½	61	8½	4½	44	46	—	—	—
'91 .....	26	43	21	42	5½	64	8½	4½	40	43	—	—	—
'92 .....	24	36	18½	39	5	66	8½	4½	40	44	—	—	—
'93 .....	28	36	20½	42	4	58	9½	5½	38	43	—	—	—
1894 .....	24½	35	20½	38	3½	42	9½	5	36	44	—	—	—
'95 .....	23	36	20½	37	6	39	8½	4½	37	42	—	—	—
'96 .....	22	30	17½	33	5½	42	8	4½	40	44	—	—	—
'97 .....	22	31	15	33	4½	51	7½	4	41	47	—	—	—
'98 .....	23	32	16½	36	5½	54	7½	3½	42	47	—	—	—
1899 .....	25	33	20	40	6½	56	7½	3½	40	49	—	—	—
1900 .....	27½	36	30½	54	6½	62	8	3½	41	56	—	—	—
'01 .....	26	38	30	53	6½	65	9	3½	39	52	—	—	—
'02 .....	27½	34	28	50	6½	64	9½	3½	39	51	—	—	—
'03 .....	28	33	21	39	6½	64	9½	3½	39	54	—	—	—
Average													
1894-1903	25	34	22	41½	5½	54	8½	3½	39½	48½	—	—	—
'88-97....	24½	36	19½	39	5½	52	8½	4½	40½	44½	—	—	—
'78-87....	32½	40	23	46	6½	62	12½	6	47	47	—	—	—
'67-77....	39	50	30	60	12½*	92	14	7½	60	54	—	—	—

Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.

1889 .....	64	70	69	46	55	68	62	84	744	1,831	3,252
'90 .....	69	82	73	45	66	61	59	79	756	1,845	3,227
'91 .....	67	86	70	45	70	63	66	73	762	1,770	3,224
'92 .....	61	72	64	40	72	63	62	74	732	1,684	3,071
'93 .....	72	72	69	32	62	66	76	71	753	1,704	3,064
1894 .....	63	70	65	31	46	66	69	70	704	1,573	2,832
'95 .....	59	72	64	48	42	59	59	69	719	1,570	2,794
'96 .....	56	60	56	44	46	57	59	74	690	1,569	2,742
'97 .....	56	62	53	38	56	55	55	77	678	1,545	2,788
'98 .....	59	64	59	41	59	55	48	78	698	1,596	2,881
1899 .....	64	66	67	50	61	55	48	78	714	1,822	3,063
1900 .....	71	72	94	54	67	57	48	85	786	2,071	3,378
'01 .....	67	76	92	52	71	64	47	80	782	1,881	3,158
'02 .....	71	68	87	50	70	70	45	79	786	1,851	3,129
'03 .....	72	66	67	50	70	70	45	82	765	1,867	3,123

\* Petroleum as compared with the average from 1873-77 only.

### III.—*Commercial History and Review of 1903.*

THE following is taken from the Supplement to the *Economist* of 20th February, 1904, in continuation of similar extracts for previous years:—

“Disappointment is writ large all over the industrial and financial record of 1903. Trade during the latter half of 1902 had manifested some signs of recovery from the ill effects of the war in South Africa, and it was hoped that in 1903 the improvement would become more general and more pronounced. And in some directions a further improvement has to be recorded, but in others there has been retrogression and growing depression. Few people were prescient enough to recognise that from the shock of a long and costly war only a gradual and slow recovery can reasonably be looked for. Tone and strength do not return immediately upon the conclusion of peace; and besides, although some measure of relief was afforded by the reduction of the income-tax in April last, we are still called upon to bear a considerable portion of the additional taxation imposed during the war, and this, of course, acts as a serious drag upon progress. In the year under review, moreover, business was impeded by political unsettlement both at home and abroad. The disturbance in Macedonia, and the fear that it may lead to serious international complications, was throughout the whole of the year, and still is, a cause of grave anxiety, and the fear of an outbreak of war between Russia and Japan, which has, unfortunately, been justified by the event, increased during the latter part of the year the perplexities against which business had to contend, and so operated to restrict trade. A potent influence in that direction was the fiscal agitation which Mr. Chamberlain sprang upon the country immediately after his return from South Africa. Into the merits of his project of fiscal revolution we do not purpose to enter here. And political influences apart, our great cotton industry suffered in 1903 a partial paralysis, consequent upon the gambling operations of American speculators in the raw material, while unseasonable weather throughout practically the whole of the year proved disastrous to farmers, and thus, by curtailing the purchasing power of the agricultural community, indirectly affected all trades, and was also directly the cause of heavy losses in such branches of business as the drapery and soft goods trades, which are almost as much dependent upon the seasons as is agriculture. With all these difficulties and drawbacks to fight against, it is not surprising that our trade in 1903 failed to realise the hopeful expectations that had been formed in regard to it, but it is comforting to know that it bore up against them exceedingly well, and that if it is not possible to speak of 1903 as a good year, neither can it be characterised as a downright bad one.

“All things considered, our foreign trade certainly showed remarkable vitality and expansiveness; so much so, that it exceeded in value all previous records. The values of our imports and exports for the year, as compared with those for 1902, are shown in the following statement:—

	1903.	1902.	Increase or Decrease.	
			Amount.	Per Cent.
	£	£	£	
Imports.....	542,906,325	528,391,274	+ 14,515,051	2·7
Exports of home products (including new ships).....	290,890,281	283,423,965	+ 7,466,316	2·6
Re-exports of foreign and colonial merchandise .....	69,557,035	65,814,813	+ 3,742,222	5·7
Total trade .....	903,353,641	877,630,052	+ 25,723,589	2·9

"Of course, our imports in 1903 were swollen by the circumstance that, owing to the deficiencies of our own harvest, we were compelled to draw larger supplies of food stuffs from abroad, and out of the total increase of 14,515,000*l.* for the year, no less than 8,100,000*l.* was in articles of food and drink. On the other hand, while in 1903, as compared with 1902, our imports of articles classed as wholly or mainly manufactured increased by 2,179,200*l.*, our exports of articles similarly classed increased by 7,354,400*l.* The fiscal reformers affirm that the value of our export trade is maintained only because a decline in our trade with foreign countries is offset by an augmentation of our trade within the Empire. But the returns for 1903 show that while our exports to our colonies and possessions increased by 2,027,000*l.*, those to foreign countries rose by 5,349,000*l.* The actual increase in the volume of our trade, however, both import and export, was somewhat smaller than is shown by the above comparison of values. The figures of value are made up of two factors, quantities and prices, and when we separate the two, as is done in Appendix A, we find that in the combined value of our imports retained for home consumption, and of our exports of home products, there was a growth of 18,238,000*l.*, or 2·43 per cent., and of this increase 13,002,000*l.*, or 1·74 per cent., is accounted for by an expansion in the volume of our trade, and 5,236,000*l.*, or 0·69 per cent., is attributable to higher prices. With the movements in prices we shall deal later. And as to quantities, we show in the following statement how the growth in 1903 compares with that in immediately preceding years:—

*Volume of our Foreign Trade. Increase or Decrease per Cent. as compared with previous Years.*

	Imports Retained for Home Consumption.	Exports of Home Produce.	Imports and Exports.
	Per cent.	Per cent.	Per cent.
1903.....	+ 1·94	+ 1·41	+ 1·74
'02.....	+ 2·60	+ 6·84	+ 4·22
'01.....	+ 2·45	+ 1·46	+ 2·06
'00.....	+ 1·34	— 3·75	— 0·62
1899.....	+ 0·72	+ 2·68	+ 1·43
'98.....	+ 4·59	— 0·14	+ 2·82
'97.....	+ 1·64	— 1·29	+ 0·51

"The volume of our exports in 1903 was maintained in excess of that of 1902 practically throughout the whole of the year, but there was in the last six months a slackening in the rate of growth of our exports. This may partly be ascribed to the fact that the latter half of 1902 was more prosperous in regard to our export trade than the first half, but there is other evidence to support the conclusion that in 1903 our industrial condition generally became less satisfactory in the later than in the earlier part of the year, and that during the final months signs of increasing depression were making themselves manifest.

"This change for the worse as the year wore on was more pronounced in our home than in our foreign trade. As to that, we have the evidence of our railway returns, which reflect pretty clearly changes in the condition of trade. Taking the fifteen chief English railway companies whose accounts are summarised in the appendix, a comparison of the traffic receipts for 1903 with those for 1902 brings out the following results :—

	Passengers and Parcels.		Merchandise.		Minerals.	
	1903.	1902.	1903.	1902.	1903.	1902.
	£	£	£	£	£	£
First six months ..	17,013,600	16,619,600	11,884,100	11,617,700	8,409,300	8,349,500
Second " ....	20,310,000	20,294,400	12,191,200	12,203,500	8,871,600	8,988,600
Total for year ...	37,323,600	36,914,000	24,075,300	23,821,200	17,280,900	17,338,100
Increase or decrease first six months ...	+ 394,000	= 2.4%	+ 266,400	= 2.3%	+ 59,800	= 0.7%
Increase or decrease second six months ...	+ 15,600	= 0.1%	- 12,300	= 0.1%	- 117,000	= 1.3%
Total increase or decrease for year ....	+ 409,600	= 1.1%	+ 254,100	= 1.0%	- 57,200	= 0.3%

"Both in the merchandise and mineral traffic a small increase in the first half of the year was more than offset by a falling off in the second half, and although in both periods the revenue from passengers showed some expansion, the rate of growth was very much smaller in the second than in the first six months. And the returns of the Bankers' Clearing-houses tell a similar tale. The record as to them is :—

## London Clearings.

[000's omitted.]

	1903.						Total.		
	First Half.			Second Half.					
	£	£	P. ct.	£	£	P. ct.	£	£	P. ct.
Stock Exchange } pay days .....	768,164,	-41,040,	5·1	688,611,	-68,940,	9·1	1,456,775,	+ 109,980,	7·0
Consols settling } days .....	363,317,	+ 28,403,	8·5	280,238,	- 5,135	2·2	593,605,	+ 23,268,	4·1
Fourths of month } Country cheques } cleared in } London .....	207,330,	+ 18,733,	9·9	174,955,	-21,608,	11·0	382,285,	- 2,875,	0·7
	443,468,	+ 10,944,	2·5	441,401,	+ 3,726	0·9	884,869,	+ 14,680,	1·7
Total London....	5,135,666,	+ 78,766,	1·6	4,984,159,	+ 12,317,	0·1	10,119,825,	+ 91,083,	0·9

## Provincial Clearings.

Country cheques } cleared in } London .....	443,468,	+ 10,914,	2·5	441,401,	+ 3,736,	0·9	884,869,	+ 14,680,	1·7
Provincial clear- } ings .....	289,018,	+ 64,000,	2·0	289,804,	+ 2,354,	0·8	578,322,	+ 8,754,	1·5
Total .....	732,486,	+ 74,944,	1·1	730,705,	+ 6,090,	0·8	1,463,191,	+ 23,434,	1·6

"In the aggregate, the London clearings, which increased in the first half of the year by 1·6 per cent., fell off a little in the second half, and if we take only the clearings on the fourths of the month, which more accurately measure the volume of mercantile transactions, the change was from an increase in the June half-year of 9·9 per cent. to a decrease in the six months ending December of 11 per cent. A somewhat similar decline, too, is shown in the later as compared with the earlier part of the year in the total of country cheques cleared in London, and in the aggregate of the clearings at provincial centres. In considering these and other statistics that point to a slackening of trade in the later months of 1903, it must, however, be remembered, that it is to the American gamble in cotton and the consequent dislocation of our great cotton industry that very much of the retrogression that is shown must be attributed.

"It has already been said that the prices of commodities reached in 1903 a higher level than 1902. The full extent of the movement in prices, as recorded by our Index Number, is shown in the following statement, which also gives the record at half-yearly periods for a number of previous years:—

'Index Number,' representing the Combined Prices of Twenty-two Leading Commodities.		'Index Number,' representing the Combined Prices of Twenty-two Leading Commodities.	
1st January, 1904.....	2197	1st January, 1900.....	2145
„ July, '03.....	2111	„ July, 1899.....	2028
„ January, '03.....	2003	„ January, '99.....	1918
„ July, '02.....	1995	„ July, '98.....	1915
„ January, '02.....	1948	„ January, '98.....	1890
„ July, '01.....	2007	„ July, '97.....	1885
„ January, '01.....	2126	„ January, '97.....	1950
„ July, '00.....	2211		

“There is here shown a rise for the year of 194 points, but that is the extreme advance, and what we are mainly concerned with now is the average level for the year. As to that, the analysis of the Trade and Navigation Returns presented in Appendix A is the best possible guide, since it embraces not a limited number of commodities, but all articles of import and export, and that analysis shows that on the average the prices of our imports were 0·37 per cent. higher than in 1902, and those of our exports 1·20 per cent. higher, the rise in the average prices of imports and exports combined being 0·69 per cent. And how these advances compare with the movements in previous years is shown in the following table:—

*Prices of Imports and Exports. Average Rise or Fall as compared with previous Years.*

	Imports Retained for Home Consumption.	Exports of Home Produce.	Imports and Exports.
	Per cent.	Per cent.	Per cent.
1903.....	+ 0·37	+ 1·20	+ 0·69
'02.....	— 0·62	— 5·23	— 2·42
'01.....	— 3·69	— 5·14	— 4·25
'00.....	+ 8·20	+ 14·48	+ 10·55
1899.....	+ 1·78	+ 6·62	+ 3·56
'98.....	+ 0·24	— 0·26	— 0·07
'97.....	— 0·12	— 1·11	— 0·51

“Owing to the advance in average prices, our imports in 1903 cost us 1,777,000*l.* more than they would have done had we been able to buy them at the average prices of 1902, but, on the other hand, we obtained for our exports 3,459,000*l.* more than we would have done if we had sold them at the prices of 1902. What the great advance in the price of cotton represented to our manufacturers may be gathered from the fact that our reduced imports of the raw staple in 1903 cost us 4,296,000*l.* more than they would have done at the average prices of the previous year, and as the finished products could not be sold at an advance corresponding to that of the raw material, an all round restriction of production had to be resorted to.



"With our agricultural community 1903 will rank as one of the worst in their experience. All throughout the year farming operations were interfered with by the exceptionally heavy rainfall. Thus not only were they deficient in quantity, but their quality was so inferior that they could only command low prices, and consequently farmers' profits were cut into at both ends. They obtained some compensation, however, from an exceptional hay crop, and the weather conditions which were so adverse to the cereal crops benefited breeders of stock, by supplying them with abundant pasturage. Throughout the greater part of the year, too, stock fetched good prices. There were thus some gains to set against losses, but taken all round 1903 was a year in which the agricultural industry, as a whole, must be said to have fared very badly.

*Gazette Average Price of Wheat (per Imperial Quarter) in United Kingdom immediately after Harvest, and Total Average Gazette Price of Calendar Years.*

Periods.	1903.		1902.		1901.		1900.		1899.		1898.		1897.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
After harvest .....	30	3	31	7	27	-	23	8	25	-	23	1	33	7
Calendar year average .....	26	9	28	1	26	9	26	11	25	8	34	-	30	2

*Comparative Gazette Prices of Grain.*

Week.	Wheat.					Barley.					Oats.							
	1903.		1902.		1901.	1903.		1902.		1901.	1903.		1902.		1901.			
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.		
July 25.....	28	7	31	5	27	3	20	10	25	-	22	1	18	6	22	8	19	4
Aug. 1.....	28	11	31	8	27	6	21	-	25	-	23	1	18	-	22	10	20	-
8.....	29	3	31	7	27	7	20	1	24	11	22	1	18	6	22	11	19	4
15.....	29	11	31	7	27	4	21	3	24	9	27	2	18	10	22	2	18	9
22.....	29	9	31	5	27	3	20	4	22	10	23	7	18	6	21	11	18	1
29.....	30	-	31	7	27	-	22	3	26	2	24	3	18	7	21	-	17	10
Sept. 5.....	30	3	29	9	26	5	22	5	24	6	25	1	18	5	19	10	17	6
12.....	28	6	27	10	26	2	22	4	27	5	24	11	17	-	19	2	17	4
19.....	27	5	27	1	26	-	24	2	26	4	25	5	16	5	18	4	17	4
26.....	27	-	26	6	25	10	24	-	26	4	25	10	16	8	18	-	17	2
Oct. 3.....	26	3	25	10	25	8	23	9	25	11	26	3	15	8	17	5	17	7
10.....	25	10	25	5	25	9	23	8	26	2	26	5	15	6	17	2	17	6
17.....	25	8	25	1	25	10	23	9	26	1	26	8	15	9	17	-	17	8
24.....	25	10	24	11	25	11	23	7	26	4	26	10	15	4	17	-	17	5
31.....	26	-	25	-	26	2	24	2	26	7	26	10	15	2	17	3	17	7
Nov. 7.....	26	4	25	1	26	6	24	3	26	3	27	-	15	9	17	2	17	8
14.....	26	6	25	-	26	9	24	6	25	11	26	9	15	9	17	3	18	3
21.....	26	9	24	11	27	1	24	3	25	6	26	10	15	10	17	2	18	7
28.....	26	6	25	-	27	1	23	11	24	11	26	9	15	11	17	-	18	9
Dec. 5.....	26	8	25	1	27	1	23	9	24	4	26	7	15	7	17	-	19	-
12.....	26	7	25	-	27	2	23	2	24	3	25	10	15	6	16	10	17	1
19.....	26	9	24	10	27	7	23	-	24	2	26	8	15	9	16	10	19	8
26.....	26	5	24	10	27	7	22	5	24	1	26	8	15	9	16	8	19	10

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"So far as can be judged from the available statistics, the condition of our working classes underwent in 1903, and especially in the latter half of the year, a change for the worse. As regards the employment for skilled labour, the Board of Trade reports that 'employment during 1903 showed a falling off compared with the three years immediately preceding, and was not up to the level of an average year. The mean percentage of the unemployed returned by trade unions during 1903 was 5.1, compared with 4.4 in 1902, 3.8 in 1901, 2.9 in 1900 (a year of exceptionally active employment), and 2.4 in 1899. The average percentage for the ten years 1894 to 1903 was 4.1. The falling off in 1903, as compared with 1902, was most marked in the latter half of the year.' Nor was it only that employment was more difficult to obtain. There was also, on balance, a slight falling off in the rate of remuneration for labour. As to this, the Labour Department of the Board of Trade states that 'the net result of the changes of wages in 1903 was a decline, but the fall measured in weekly loss of wages was comparatively slight, being considerably less than in either of the two preceding years, though spread over a larger number of trades.' The net results of the changes recorded during the year are set forth in the following statement, the figures for each of the previous five years being added for the purpose of comparison:—

Year.	Total Number of Individuals Affected by Changes in Rates of Wages.	Net Result on Weekly Wages of those Affected by Changes.	
		Total Amount.	Average per Head.
		£	s. d.
1903.....	891,550	— 38,893	— 1 10½
'02.....	890,356	— 72,700	— 1 7½
'01.....	932,126	— 77,343	— 1 8
'00.....	1,135,786	+ 209,373	+ 3 8½
1899.....	1,175,576	+ 90,905	+ 1 6½
'98.....	1,015,169	+ 80,815	+ 1 7

"It was fortunate, however, that comparatively few trade disputes occurred to add to the troubles of the year. 'Greater freedom from industrial disputes,' writes the Board of Trade, 'was experienced in 1903 than in any of the previous ten years. During the year 360 disputes began, affecting 113,873 workpeople, while the aggregate duration of all disputes was 2,316,792 working days. The average annual duration of disputes in the period 1893-1902 was 8,839,347 working days, and the average number of disputes and of workpeople affected were 724 and 271,000 respectively.' Our working classes, too, were further helped during the year by the continued cheapness of foodstuffs. Nevertheless, their condition was, on the whole, less good than in 1902, and this reflected in the returns of pauperism, which show that at the end of the year both the number of paupers and the proportion of paupers to total population was somewhat larger than at the close of 1902. There was, too, as will be seen from the following statement, a reduction during

the year in the quantities of dutiable articles taken for home consumption, which testifies to a curtailment of the purchasing power of the working classes :—

*Quantities Retained for Home Consumption.*

		1903.	1902.	1901.
Tea .....	lbs.	255,365,953	254,440,188	255,873,082
Sugar.....	cwts.	27,730,720	30,716,364	17,905,432*
Cocoa .....	lbs.	51,108,987	53,766,799	50,046,311
Coffee .....	cwts.	275,330	293,733	332,272
Tobacco.....	lbs.	83,590,466	82,918,503	80,690,354
Wines .....	galls.	13,942,092	15,348,236	15,250,578
Spirits, home .....	proof galls.	33,788,447	35,330,523	36,372,300
" foreign.....	galls.	8,187,008	8,778,200	8,880,013
Beer .....		34,948,720	35,243,472	35,508,804

\* From 19th April to 31st December.

" Thus far in 1904 no change for the better in the condition of trade generally can be discerned, and the outlook for the year is very chequered. The situation in the Balkans has not improved; with Russia's hands tied in the Far East, a restraining influence upon Bulgaria is relaxed, and the Turkish Government will stand in less fear of coercion, and be less disposed, therefore, to give full effect to the reforms prescribed in the Murzteg programme. As to the course the war between Russia and Japan may take, it would be idle to attempt to speculate, but war is always a disturber of trade, and the disturbance would, of course, be all the greater if any other Powers were drawn into the conflict. Then at home the fiscal agitation does not augur well for an industrial revival. But while there are these gloomy clouds on the horizon, there are bright spots too. Affairs in South Africa are getting into better shape, and we may fairly hope for an expansion of our trade with the colonies there. Australia, too, now that she is recovering from her losses caused by the prolonged drought, may be expected to prove a better customer. So also may India, now that she has been relieved from the blight of plague and famine. Argentina, which last year largely increased her trade with us, is, under the stimulus of another abundant harvest, enjoying marked prosperity, and our commerce with her seems likely to develop still further; and in other directions also there is promise of an increased trade. Moreover, although the recovery from the strain and stress of the South African War has been far slower than most people expected, and is not likely to be much, if any, more rapid even now, still the injuries inflicted by that war are being mitigated by the lapse of time, and, industrially and financially, business is working round into a more normal condition. There are some grounds, therefore, for hoping that 1904 may prove to be a better year than was 1903, especially if weather conditions are more auspicious, but hope must be largely mingled with and chastened by doubt.

"There was no sensational disturbance of monetary conditions during the year 1903, and the course of the market was comparatively smooth and regular. The Bank rate was reduced from 4 to 3 per cent. in the spring, and advanced from 3 to 4 per cent. in the autumn, these being the kind of fluctuations that may be expected to take place if no special circumstances occur to interfere with the ordinary course of events. One deviation from the usual course that might be noticed was the long retention of the 4 per cent. Bank rate at the beginning of the year, the reduction to  $3\frac{1}{2}$  per cent. taking place only on 20th May, and a further reduction to 3 per cent. on 17th June. That was partly due to the issue of the Transvaal Loan, the huge applications for which kept a large sum of money locked up for a time. Although the Bank held control of the market to a much smaller extent in 1903 than in 1902, the 4 per cent. rate was in existence for a longer period, and average rates were higher than in the previous year. The average Bank rate in 1903 was 3*l.* 15*s.* per cent., as compared with 3*l.* 6*s.* 7*d.* per cent. in 1902, while the average market rate for best three months' bills was 3*l.* 7*s.* 3*d.* per cent., against 2*l.* 19*s.* 3*d.* per cent., the difference of 7*s.* 4*d.* per cent. being the same in both years. The margin between the rates paid by bankers on their deposits and the return on discounted paper was much the same as in the previous year, and the fact that the earnings of banks generally were upon a slightly reduced scale confirms the impression produced by other circumstances, that there was less business to deal with. Of more importance to the banks than the small reduction in earnings was the necessity they found themselves faced with of writing down their Consols and other securities, in accordance with the further depreciation in the market value of all gilt-edged securities that had taken place during the year. The usual figure adopted for Consols was 85, and as in most cases they previously stood at 90, the operation involved the provision of an amount equal to 5 per cent. on the book value. Other securities were written down to their market value or below it. Only a comparatively small portion of the large sums required for these purposes had to be taken from profits. In some cases recourse was had to reserve funds, but in more numerous instances the banks were able to provide the necessary amounts from their inner reserves, or contingency funds, which do not appear in the balance sheets; or they devoted to the purpose of writing down sums which had been received as premiums on new issues of shares, and which would otherwise have gone to swell the existing reserves. Continental centres were well supplied with funds during the greater part of the year, and considerable sums were employed here, because rates were more remunerative. The position in the United States gave rise to anxiety from time to time, owing to the great fall in the prices of securities, which might have led to a monetary breakdown. That, however, was fortunately avoided, and no more than the usual demand for currency was experienced at the time of moving the crops. Somewhat exceptional gold requirements had to be met from South America and Egypt, but these were provided for without any excessive strain. The

home Government raised a sum of 8,500,000*l.* by the issue of additional Treasury Bills, which have to be paid off before the end of the current financial year, and former issues had from time to time to be renewed. These operations, however, were not of a nature to cause more than temporary disturbance. The money market during 1903 was not exposed to the stress and strain of the three previous years, but in Lombard Street, as elsewhere, the effects of the exhaustion due to the war drain were very apparent.

"Subjoined is a statement of the average Bank and market discount rates for the past and several previous years:—

	1903.	1902.	1901.	1900.	1899.
Changes in bank rate .....	three	three	six	six	six
	per cent.	per cent.	per cent.	per cent.	per cent.
Highest bank rate .....	4	4	5	6	6
Lowest „ .....	3	3	3	3	3
	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>
Average bank rate .....	3 15 -	3 6 7	3 14 5	3 19 2	3 13 6
Average market rate for best three months' bills .....	3 7 3	2 19 3	3 3 3	3 13 3	3 5 -
Market below bank .....	- 7 4	- 7 4	- 11 2	- 5 11	- 8 6

	1898.	1897.	1896.	1895.	1894.
Changes in bank rate .....	four	six	three	none	two
	per cent.	per cent.	per cent.	per cent.	per cent.
Highest bank rate .....	4	4	4	2	3
Lowest „ .....	2½	2	2	2	2
	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>
Average bank rate .....	3 4 9	2 12 6	2 10 5	2 - -	2 2 1
Average market rate for best three months' bills .....	2 11 10	1 15 10	1 7 7	- 15 11	- 19 3
Market below bank .....	- 12 11	- 16 8	1 2 10	1 4 1	1 2 10

## European Rates of Discount per Cent. per Annum, 1903.

Cities.	Beginning of Months of 1903.												
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
<i>London.</i>	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
Bank rate	4	4	4	4	4	3½	3	3	4	4	4	4	3.79
Open market	3½	3½	3½	3½	3½	3½	2½	2½	3½	3½	3½	3½	3.36
<i>Paris.</i>													
Bank rate	3	3	3	3	3	3	3	3	3	3	3	3	3
Open market	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	2.7
<i>Vienna.</i>													
Bank rate	3½	3½	3½	3½	3½	3½	3½	3½	3½	3½	3½	3½	3½
Open market	3½	2½	2½	3	3½	2½	3	2½	3½	3½	3½	3½	3
<i>Berlin.</i>													
Bank rate	4	4	3½	3½	3½	3½	4	4	4	4	4	4	3.83
Open market	3½	1½	2½	2½	2½	3½	3	3½	3½	3½	3½	3½	3.03
<i>Frankfort.</i>													
Bank rate	4	4	3½	3½	3½	3½	4	4	4	4	4	4	3.83
Open market	3½	1½	2½	2½	2½	3½	3	3½	3½	3½	3½	3½	3.03
<i>Amsterdam.</i>													
Bank rate	3	3	3	3	3½	3½	3½	3½	3½	3½	3½	3½	3.32
Open market	2½	2½	2½	3½	3½	3½	3½	3½	3½	3½	3½	3½	3.18
<i>Brussels.</i>													
Bank rate	3	3	3	3	3	3	3	3	3	4	3½	3½	3.17
Open market	2½	2½	2½	2½	2½	2½	2½	2½	2½	3½	3½	3½	2.85
<i>Hamburg.</i>													
Bank rate	4	4	3½	3½	3½	3½	4	4	4	4	4	4	3.83
Open market	3½	1½	2½	2½	2½	3½	3	3½	3½	3½	3½	3½	3.03
<i>St. Petersburg.</i>													
Bank rate	4½	4½	4½	4½	4½	4½	4½	4½	4½	4½	4½	4½	4.5

"Although money was in fair supply during the year 1903, and average rates, though higher than in 1902, yet not really onerous, there seemed to be very little capital available for new investments. The lack of capacity to absorb new issues was partly due to the surfeit of Government securities that occurred during the war, but it might be ascribed in quite as great a degree to the continued disappointment of the hopes of improved conditions after the close of war. Many people had laid in stocks of Consols or South African mining shares in the expectation that they would be able to make a good profit by re-selling them within a comparatively short period, and many others, still more sanguine, were carrying the stock or shares on borrowed money. No rise having taken place, the former class are probably still sitting on their investments, and the latter class have had to meet their margins, and are still more crippled than the former in regard to their power of taking up new securities. In consequence of these conditions, only absolutely necessary issues were made, and the total for the twelve months fell short of any year since 1894, as appears from the following statement, comparing the new capital issues and actual money calls for the last ten years:—

[000's omitted.]

	Capital Created and Issued.			Actual Money Calls.		
	In England.	England and elsewhere.	Total.	In England.	England and elsewhere.	Total.
	£	£	£	£	£	£
In 1903....	101,308,	7,155,	108,463,	92,093,	2,276,	94,369,
„ '02....	140,050,	13,762,	153,812,	132,407,	9,814,	141,251,
„ '01....	155,618,	3,720,	159,338,	132,903,	1,857,	134,760,
„ '00....	160,953,	4,546,	165,499,	118,732,	12,456,	131,188,
„ 1899....	124,192,	8,978,	133,170,	82,143,	8,144,	90,289,
„ '98....	113,838,	36,336,	150,173,	79,789,	21,412,	101,201,
„ '97....	145,612,	11,687,	157,299,	73,947,	7,747,	81,694,
„ '96....	125,964,	26,713,	152,677,	66,111,	18,281,	84,393,
„ '95....	91,694,	12,996,	104,690,	64,645,	19,855,	84,500,
„ '94....	61,191,	30,644,	91,835,	62,666,	11,556,	74,222,

“There certainly was one successful issue of new capital, and that was the flotation of the Transvaal Loan for 30,000,000*l.* It was offered upon terms which made its quotation at a premium a practical certainty, so that everybody sent in applications for as large an amount as they could borrow the necessary 5 per cent. that had to be deposited on application. That such was the case was proved by the fact that the Bank itself lent, during the time the lists were open, nearly as much as it received in applications. The rush to secure allotments of the Transvaal Loan induced several Colonial Governments and municipalities to come forward as borrowers, but the reception accorded to their offers was so distinctly unfavourable as to discourage further attempts of the kind. These descriptions of capital applications were, therefore, almost entirely absent during the last half of the year. Apart from the Transvaal Loan, British colonies applied for only 3,356,200*l.* during the whole year, but British municipalities, chiefly owing to large offerings by the London County Council, managed to raise over 10,500,000*l.* before the check came. The following is a classification of the year's capital applications, according to the sources from whence the offers emanated:—

*Capital Applications.*

Description.	1903.	1902.
	£	£
British Government loans .....	1,970,000	33,870,000
Colonial                   ".....	33,356,200	19,405,100
Foreign                   ".....	8,683,800	13,868,800
British municipal and county loans .....	10,550,800	14,711,500
Colonial and foreign corporations .....	3,096,200	1,799,400
British railways .....	7,707,200	9,122,200
Indian and colonial railways .....	5,715,700	3,415,000
Foreign railways .....	1,020,800	8,992,700
Mining companies—		
Australasian .....	460,300	599,400
South African .....	1,347,100	7,047,800
West                   ".....	60,000	552,300
Other mines .....	834,700	2,062,500
Exploration and financial.....	2,202,300	3,728,000
Breweries and distilleries .....	2,275,000	829,000
Merchants, importers, and exporters .....	783,400	1,410,500
Manufacturing .....	2,080,000	1,376,500
Stores and trading.....	5,001,300	9,128,600
Iron, coal, steel, and engineering .....	2,943,400	2,690,900
Estate and land.....	4,909,500	1,651,500
Electric lighting, power, &c. ....	8,957,000	4,835,800
Tramway and omnibus.....	1,487,700	2,253,600
Gas and water .....	1,614,100	1,604,100
Hotels, theatres, and entertainments .....	1,612,900	1,300,800
Patents and proprietary articles .....	400,700	302,000
Docks, harbours, and shipping .....	1,347,400	2,778,300
Banks and insurance.....	2,414,200	2,326,600
Miscellaneous.....	679,200	2,148,800
	108,462,700	153,812,000

"The colonial municipal loans came almost entirely from South Africa, developments being required at the capital cities of Cape Colony, Natal, and the Transvaal. High rates had to be paid in order to secure the subscription of the loans.

"The bulk of the capital offered by British railways, of which public notice was given, consisted of stock issued for the construction of electric railways. A sum of 2,000,000*l.* in 4 per cent. preference shares was offered by the Great Northern, Piccadilly, and Brompton Railway, and 2,100,000*l.* in 10*l.* shares of a railway on the mono-rail principle to be constructed between Manchester and Liverpool. The public, however, did not respond to the latter application.

"The failure of South Africa to fulfil expectation is strikingly exemplified by the fact that only 1,347,100*l.* capital was raised for mining undertakings there, against 7,047,800*l.* in 1902, during five months of which year hostilities were still going on. The comparatively small sum offered was practically all issued in the form of new capital allotted by existing companies to their own shareholders. That, in fact, was a feature of all the mining and industrial company issues of the year.



"Business on the Stock Exchange continued throughout the year 1903 to be of the same disappointing character that marked it in the seven months of 1902 after the close of the South African war. The fact is, the exhausting effects of that costly struggle were much less apparent while it was going on than after it had ended. It is usual to ascribe the depreciation in high-class securities and the difficulty in placing new issues to the large amounts borrowed by the British Government for the purposes of the war. That, however, hardly suffices to explain the state of congestion which has been reached. As may be seen from the statistics of new issues in another part of this review, the sums offered for subscription in the three years of the war, including the Government borrowings, did not largely exceed the totals for preceding years, and supposing there were about the same amount of surplus capital seeking investment, the difference would have been merely its diversion from other classes of securities into Government stocks. Incidentally, the financial history of these years has proved the fallacy of attempts at gauging the saving capacity of the nation, or other matters as to which no reliable data are available to form a basis for the calculations. Thus, Sir Robert Giffen has guessed—the process can hardly be given a higher character—that the surplus income of the British nation amounts to 240,000,000*l.* per annum. Now the cost of the war has been arrived at, with some degree of precision, as having amounted to about 220,000,000*l.* That is less than the assumed amount of one year's savings, but, though it was spread over three years, the country was unable to provide it without seriously crippling, if not altogether suspending, its capacity for investing capital in other directions.

"From the comparative table compiled by the *Bankers' Magazine*, it appears that the 325 securities upon which its calculations are based were valued, on 19th December, 1903, at 2,994,368,000*l.*, which compared with 3,083,609,000*l.* on 18th December, 1902, thus showing a fall of 89,241,000*l.*, equal to 3·2 per cent. The table is as follows:—

[000's omitted.]

Nominal Amount (Par Value).	Department, containing	Market Values.		Increase or Decrease for the Year.	
		19th Dec., 1903.	18th Dec., 1902.	Amount.	Per Cent.
£		£	£	£	
800,194,	14 British and Indian funds...	742,334,	769,475,	- 27,141,	3'5
36,379,	8 Corporation (U.K.) stocks	37,596,	38,961,	- 1,365,	3'5
49,417,	11 Colonial Government stocks	50,162,	49,877,	+ 285,	0'6
29,823,	5 Ditto inscribed ditto	30,107,	30,974,	- 867,	2'8
928,539,	30 Foreign Government ditto	846,876,	851,919,	- 5,043,	0'6
213,007,	19 British Railway Ordinary	245,787,	267,255,	- 21,468,	8'0
171,118,	14 Ditto Debenture .....	183,428,	189,568,	- 6,140,	3'2
128,803,	13 Ditto Preference .....	166,224,	170,262,	- 4,038,	2'4
47,010,	7 Indian Railways .....	57,416,	58,313,	- 897,	1'5
56,014,	{ 8 Railways in British pos- sessions .....	39,707,	40,343,	- 636,	1'6
89,000,	10 American railway shares...	87,931,	102,374,	- 14,443,	14'1
59,545,	12 Ditto bonds (gold) .....	49,836,	51,157,	- 1,321,	2'6
7,605,	5 Ditto bonds (sterling) ....	8,499,	8,511,	- 12,	0'1
19,516,	12 Foreign railways .....	16,711,	15,755,	+ 956,	6'1
84,216,	9 Ditto obligations .....	57,790,	55,239,	+ 2,551,	4'6
	30 Bank shares—				
	{ 10 British bank shares .....	46,885,	48,522,	- 1,637,	3'4
	4 Australasian bank shares	9,848,	9,613,	+ 235,	2'4
35,190,	{ 6 Other colonial bank shares .....	8,802,	8,596,	+ 206,	2'4
	10 Semi-foreign bank shares	17,257,	16,484,	+ 773,	4'6
7,038,	{ 8 Corporation stocks (colo- nial and foreign) .....	7,284,	7,186,	+ 98,	1'3
6,167,	8 Financial, land .....	10,119,	8,715,	+ 1,404,	16'1
10,842,	4 Gas .....	28,118,	28,666,	- 548,	1'9
3,956,	14 Insurance .....	17,871,	18,175,	- 304,	1'7
6,055,	7 Coal, iron, and steel .....	9,279,	10,735,	- 1,456,	13'6
20,716,	6 Canal and dock .....	77,416,	75,767,	+ 1,649,	2'2
4,529,	8 Breweries .....	11,258,	11,437,	- 179,	1'6
9,944,	15 Commercial, industrial, &c.	34,931,	35,113,	- 182,	0'5
8,810,	{ 10 Mines (chiefly South African) .....	47,417,	55,352,	- 7,935,	14'3
4,966,	8 Shipping .....	7,646,	7,947,	- 301,	3'8
17,914,	9 Telegraph and telephone...	17,020,	16,964,	+ 56,	0'3
4,066,	11 Tram and omnibus .....	3,442,	3,466,	- 24,	0'7
8,553,	10 Waterworks .....	19,371,	20,888,	- 1,517,	7'3
2,868,932,	325 Totals .....	2,994,368,	3,083,609,	- 89,241,	3'2

"It will be seen that the heaviest falls occurred in British Government and Corporation stocks, British and American railways, land and financial companies, coal, iron, and steel shares, and mines.

"In regard to consols, a fact to which, perhaps, not sufficient weight had been attached, was the automatic reduction of interest on 1st April, 1903, under the Goschen conversion scheme, from  $2\frac{1}{2}$  to  $2\frac{1}{2}$  per cent. The actual fall in the price during the year was from 93 to 88. But if measured by the yield, there was an actual rise in the price, as a  $2\frac{1}{2}$  per cent. stock at 93 gives a return of

2*l.* 19*s.* 2*d.* per cent., and a  $2\frac{1}{2}$  stock, to give the same yield, would have to be bought at  $84\frac{1}{2}$ . The lowest price touched by consols during the year was  $86\frac{1}{4}$ . The effects of the heavy Government borrowing and the reduction of the interest on consols were felt just at a time when, owing to previous postponements, colonial and municipal authorities found the raising of new capital a pressing necessity. Underwriters were compelled to notify their inability to commit themselves, and these circumstances naturally depressed the prices of existing stocks. The cessation of borrowing had a good effect in the colonial market, and a rally towards the end of the year made the comparison with the end of 1902 better than it would have been some weeks earlier.

"During the first half of 1903 the results of working on British railways were fairly satisfactory, and prices of home railway stocks displayed, in many instances, a considerable improvement, though there were some that went lower during the half-year. In the last six months the traffic receipts showed, as a rule, some falling off as compared with the corresponding period in 1902, and as hopes of dividends being maintained dwindled, prices fell away also. At the end of the year not only had the stocks which showed an improvement in the first six months lost it, but those which then showed a loss had receded still more, and there was a general decline in market value as compared with the end of 1902.

"In the American market there was a steady course of liquidation going on in the United States through the year, which was the natural reaction after the enormous inflation that had taken place during the period of consolidation and manœuvring for control of the railroads, which led to a good deal of wild gambling. The scaling-down process was hastened by a distinct check to the trade boom, in the course of which some of the industrial trusts came to grief, and there were disclosures of the methods followed by their promoters and the hollow basis on which they stood that greatly shook the confidence of the public in other concerns of a similar character. That distrust was specially manifested in the case of the great Steel Trust, and the fact that it ceased to pay dividends on its common stock brought all its securities to a very low level in the market, and a good many railroad stocks came down with them. On the whole, there is reason for satisfaction that the great fall which brought down American securities to a reasonable level was effected without a serious breakdown of credit in the United States, which, had it taken place, would have adversely affected European markets.

"The Canadian railways enjoyed a very prosperous year so far as gross receipts were concerned, but the directors of both roads took advantage of the circumstance to effect a much-needed improvement in the physical condition of the lines, and in that way spent nearly the whole of the increased revenue. The Canadian Pacific, it is true, increased its dividend from 5 to 6 per cent., but, in spite of that, the price of the shares was very much lower at the end than at the beginning of the year, with the result that the yield upon an investment in them was very much higher.

"The chief feature in the foreign railway market was the strength and activity of Argentine railways, excellent crops affording a large increase in traffic receipts, while the improvement in the condition of the Republic generally gave confidence to investors. Unfortunately, this gave the speculator an opportunity also, and prices were run up to a figure at which many of the stocks would be very risky to hold as permanent investments. Mexican railways did rather better towards the end of the year, on account of a rise in the price of silver; but, on the whole, the results for the year were not very encouraging, and prices showed but little variation on balance. The few Brazilian railways still in the hands of English companies maintained their position, but produced no special feature of interest in the markets.

"In the miscellaneous market probably the main features of interest were the fluctuations in London dock and London water companies' stocks, which occurred from time to time, according to the opinions ruling as to the terms upon which the undertakings might be taken over by a public authority. The Port of London scheme has not advanced to the executive stage, but the stocks lost in market value on balance, as did those of the water companies, though the prospects of the latter were better thought of at the end of the year than a month or two previously. Bank shares underwent but little change. Telegraph, omnibus, and insurance securities improved in some degree, while, as shown by the table quoted above, iron and coal shares suffered a heavy depreciation, owing to the less profitable conditions prevailing in the industries as compared with two years or so ago.

"In the South African mining market the boom that was confidently predicted as sure to follow the end of the war has never arrived, and, though the output of gold from the Transvaal steadily advanced throughout 1903, it did not approach the level reached in ante-bellum days, and was never rapid enough to set going a real boom. The chief difficulty has been the provision of sufficient cheap labour to get the mines fully at work, and the proposal to import Asiatics has raised a great outcry, which is still going on. Into the merits of that question we cannot enter here, we have only to record the general effect of the shortage of labour, which was to leave the prices of all South African securities at a much lower level at the end than at the beginning of the year. The Westralian group of mining shares closed the year in a somewhat better position than they began it, the output of gold having increased and a considerable improvement taken place in the management of the mines. Indian gold shares kept fairly steady, but those of the newer prospecting groups, such as West Africans and Egyptians, closed the year in a somewhat discredited position. Copper mining shares alone showed a distinct improvement in market value as compared with the end of 1902.

"Reviewing the course of the silver market during the year, Messrs. Pixley and Abell write:—The year 1903 has been remarkable for the large demand for coinage in the silver-using countries of the East. During the early part of January demand was

dull, and on large sales by the United States the price fell from 22½*d.*, the quotation at the beginning of the year, to 21½*d.* on 22nd January. This proved, however, to be the lowest point of the market. Low prices stimulated trade consumption, which has been brisk throughout the year, and a material rise set in when it became known that the United States were about to establish a new coinage in the Philippines. The Act of Congress authorising this issue provided for the purchase of silver sufficient to coin \$75,000,000, equal in weight and fineness to the United States dollar, these dollars to be circulated in the Philippines at 50 cents each for the purpose of foreign exchange. It was estimated that 65,000,000 ounces would be required, and about 12,500,000 ounces were purchased between March and November. There was also a large demand for Paris in connection with their Eastern colonial coinage, and 260,000 ks. were bought during the year. The Indian Government also was a large buyer. Their reserve of rupees, which stood at about 16 crores in 1902, fell to 9 crores early in 1903, and purchases amounting to 300,000*l.* were made in March. Purchases were resumed in October, when gold began to be shipped in large quantities from Australia to India, and when it was found that the crops throughout India were unusually abundant, and that the Treasury reserves were being rapidly depleted. So far about 2,000,000*l.* has been bought, but in spite of this, the reserve in the Treasury at the end of the year was under 9 crores, and it is felt that with the recent sharp rise in the price of cotton and the expected large export of all Indian produce, the demand for new coinage will continue well into 1904. Owing to the above causes, the price of silver rose steadily during the early part of the year, until in August, when there was also a brisk demand for the Indian bazaars, and the supply from America being reduced owing to the purchases for the Philippine coinage, quotations advanced rapidly, and 28½*d.* was touched. We then began to feel the adverse influences of the change of coinage in the East, for Mexican dollars, which were being demonetised in the Philippines, found their way to this market, and the redundancy of silver coin in the Straits, to which we allude below, proved a great source of weakness. The position in China was also unsatisfactory, and considerable sales of both sycee and dollars were made as a remittance against indemnity payments. It was found, too, that the Indian bazaars were overloaded with silver, and there were re-sales on this market. Further, the United States Government stopped, for the time being, their purchase for the Philippine coinage. When these supplies of dollars and silver came on the market, prices gave way rapidly, until 25*d.* was reached.

"During the closing weeks of the year there was some recovery, owing to the continued purchases by the Indian Government, to the stoppage of sales of silver by China and the Indian bazaars, and to the fact that the Straits were not so eager to sell dollars.

"The business of the year in Mexican dollars has been large. In January Mexican exchange permitted the purchase of these coin by Mexico, but subsequently the Straits proved the better market,

and the price ruled generally at well over the melting value, following closely the variations in the silver market. These conditions continued until August, when the price equalled that of silver on more than one occasion. Large shipments of dollars were made to Mexico, owing partly to the belief that Mexico was about to establish a gold standard, and that the mints would be closed to the free coinage of silver. This anticipation was not realized, and later in the year many of these dollars were shipped back again to England, and added materially to the weakness in our market. Early in the year the Straits Government called a Commission to discuss the expediency of putting their currency on a gold basis, and a report was issued in favour of the change. This report was adopted, but although the coinage of the new dollar is being proceeded with, there has been no announcement as yet as to its parity.

"When this decision was made known, the Straits were flooded with dollars from Hong Kong and the East generally until 2nd October, when further importations were prohibited. As soon as the price of bar silver had advanced to over 28*l.*, the Straits began to re-sell the Mexican dollars on the London market, and down to the end of the year over \$8,000,000 were shipped over here. These sales were an important factor in the sharp fall of silver which took place during November and December.

*Monthly Fluctuations in Price of Bar Silver.*

	1903.		1902.		1901.		1900.		1899.	
	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>
January .....	21 $\frac{1}{8}$	22 $\frac{1}{8}$	25 $\frac{7}{8}$	26 $\frac{1}{2}$	29 $\frac{9}{16}$	27 $\frac{1}{2}$	27 $\frac{1}{2}$	27	27 $\frac{1}{2}$	27 $\frac{1}{2}$
February .....	21 $\frac{1}{8}$	22 $\frac{1}{8}$	25 $\frac{9}{16}$	25 $\frac{1}{2}$	28 $\frac{1}{2}$	27 $\frac{1}{2}$	27 $\frac{1}{2}$	27 $\frac{9}{16}$	27 $\frac{1}{2}$	27 $\frac{1}{2}$
March .....	22 $\frac{1}{2}$	22 $\frac{1}{2}$	24 $\frac{1}{2}$	25 $\frac{7}{8}$	28 $\frac{3}{8}$	27 $\frac{7}{8}$	27 $\frac{1}{2}$	27 $\frac{7}{8}$	27 $\frac{9}{16}$	27 $\frac{1}{2}$
April .....	22 $\frac{1}{2}$	25 $\frac{1}{8}$	23 $\frac{9}{16}$	24 $\frac{1}{2}$	27 $\frac{1}{2}$	26 $\frac{1}{2}$	27 $\frac{1}{2}$	27 $\frac{9}{16}$	28 $\frac{1}{2}$	27 $\frac{1}{2}$
May .....	24 $\frac{5}{16}$	25 $\frac{1}{2}$	23 $\frac{9}{16}$	24	27 $\frac{1}{2}$	27 $\frac{7}{8}$	27 $\frac{1}{2}$	27 $\frac{1}{2}$	28 $\frac{1}{2}$	28
June .....	24 $\frac{1}{2}$	24 $\frac{9}{16}$	23 $\frac{1}{2}$	24 $\frac{7}{8}$	27 $\frac{9}{16}$	27 $\frac{1}{2}$	28 $\frac{9}{16}$	27 $\frac{9}{16}$	28	27 $\frac{1}{2}$
July .....	24 $\frac{1}{2}$	25 $\frac{1}{2}$	24 $\frac{3}{8}$	24 $\frac{1}{8}$	27 $\frac{1}{2}$	26 $\frac{1}{2}$	28 $\frac{9}{16}$	27 $\frac{1}{2}$	27 $\frac{1}{2}$	27 $\frac{1}{2}$
August .....	25 $\frac{9}{16}$	26 $\frac{1}{2}$	24 $\frac{1}{2}$	24 $\frac{7}{8}$	27 $\frac{1}{2}$	26 $\frac{1}{2}$	28 $\frac{7}{8}$	27 $\frac{1}{2}$	27 $\frac{1}{2}$	27 $\frac{1}{2}$
September ....	26 $\frac{1}{2}$	27 $\frac{9}{16}$	23 $\frac{9}{16}$	24 $\frac{1}{2}$	27	26 $\frac{1}{2}$	29 $\frac{1}{2}$	28 $\frac{7}{8}$	27 $\frac{1}{2}$	26 $\frac{5}{8}$
October .....	27 $\frac{7}{8}$	28 $\frac{1}{2}$	23 $\frac{1}{2}$	23 $\frac{1}{2}$	26 $\frac{1}{2}$	26 $\frac{1}{2}$	30 $\frac{3}{8}$	29 $\frac{1}{2}$	26 $\frac{1}{2}$	26 $\frac{1}{2}$
November .....	26 $\frac{1}{2}$	27 $\frac{1}{2}$	21 $\frac{1}{2}$	23 $\frac{1}{2}$	26 $\frac{1}{2}$	25 $\frac{1}{2}$	29 $\frac{1}{2}$	29 $\frac{7}{8}$	27 $\frac{9}{16}$	26 $\frac{1}{2}$
December .....	25	26 $\frac{7}{8}$	21 $\frac{3}{8}$	22 $\frac{1}{2}$	25 $\frac{1}{2}$	24 $\frac{1}{2}$	29 $\frac{1}{2}$	29 $\frac{1}{2}$	27 $\frac{1}{2}$	26 $\frac{5}{8}$
Yearly avege.	24 $\frac{1}{2}$		24 $\frac{1}{8}$		27 $\frac{3}{8}$		28 $\frac{1}{2}$		27 $\frac{7}{8}$	
Highest price	28 $\frac{1}{2}$		26 $\frac{1}{2}$		29 $\frac{9}{16}$		30 $\frac{3}{8}$		28 $\frac{1}{2}$	
Lowest. "	21 $\frac{1}{8}$		21 $\frac{1}{8}$		24 $\frac{1}{8}$		27		26 $\frac{1}{2}$	

APPENDIX (A.)—*Volume and Value of our Foreign Trade of 1903 compared with that of 1902.*

"For a number of years past it has been our practice to analyse the annual trade and navigation returns, so as to show to what extent the recorded movements in values have been due to variations in the volume of the year's trade, and how far to alterations in prices. The details of this analysis for the year 1903 will be found in the numbers of the *Economist* of the 16th and 23rd

January, and we now, as usual, bring together the main figures, in order that the broad results may be more clearly indicated:—

### I. Imports.

	1903.		1902.
	Value in Trade and Navigation Returns.	Value Calculated at Prices of 1902.	Value in Trade and Navigation Returns.
	£	£	£
Articles of food and drink .....	228,328,000	229,278,000	218,611,000
Tobacco .....	4,178,000	4,261,000	5,792,000
Raw materials and articles mainly unmanufactured—			
(a.) Iron and other metals .....	10,813,000	10,925,000	10,506,000
(b.) Wood .....	27,118,000	26,026,000	25,187,000
(c.) Textile materials .....	80,496,000	74,591,000	77,703,000
(d.) Oils and oilseed .....	24,464,000	25,763,000	25,284,000
(e.) Miscellaneous .....	30,667,000	30,161,000	30,416,000
Articles wholly or mainly manufactured—			
(a.) Metals and manufactures } thereof .....	35,916,000	38,063,000	36,168,000
(b.) Yarns and textile fabrics.....	38,255,000	37,325,000	40,510,000
(c.) Miscellaneous .....	60,488,000	62,675,000	55,803,000
All other articles, including parcel post .....	2,183,000		
Total imports.....	542,906,000	539,068,000	528,391,000
Less re-exports .....	69,557,000	67,496,000	65,815,000
Net imports .....	473,349,000	471,572,000	462,576,000

### II. Exports.

Articles of food and drink .....	15,707,000	15,897,000	16,411,000
Tobacco .....	656,000	781,000	708,000
Raw materials and articles mainly unmanufactured .....	35,380,000	36,822,000	34,597,000
Articles wholly or mainly manufactured—			
(a.) Metals and manufactures } thereof .....	63,925,000	62,410,000	61,125,000
(b.) New ships .....	4,285,000	4,549,000	5,871,000
(c.) Yarns, textile fabrics, and apparel .....	119,221,000	115,357,000	115,474,000
(d.) Miscellaneous .....	47,460,000	51,614,000	45,067,000
All other articles, including parcel post .....	4,256,000		
Total .....	290,889,000	287,430,000	283,424,000

“ From the above tables it appears that the total value of the imports retained for home consumption in 1902 was 462,576,000*l.*, and that if we had paid for our net imports of last year the same average prices as in 1902, they would have cost us 471,572,000*l.* It follows, therefore, that there was last year an increase in the

quantity of our net imports equal to the difference between 471,572,000*l.* and 462,576,000*l.*, which is 8,996,000*l.*, or 1·94 per cent. Similarly with the exports. The total net value of British commodities sent abroad in 1902 was 283,424,000*l.*, while our exports in 1903, if we had received for them the same average prices as in 1902, would have realised 287,430,000*l.* There was consequently an increase of quantity in 1903 equal to the difference between 287,430,000*l.* and 283,424,000*l.*, which is 4,006,000*l.*, or 1·41 per cent. And taking imports and exports together, the volume of our foreign trade last year (exclusive of re-exports) shows, as compared with 1902, an increase of 1·74 per cent., the computation being:—

	£
Actual value of net imports and of exports of } British products in 1902.....	746,000,000
Value of net imports and of exports of British } products in 1903, calculated at the prices of } 1902 .....	759,002,000
Increase in 1903, due to larger quantities...	13,002,000
	= 1·74 per cent.

“Next as regards prices. Our imports for home consumption in 1903 were valued at 473,349,000*l.*, and if we had paid for them the same average prices as in 1902 they would have cost us only 471,572,000*l.* There was consequently an increase due to variation in price of 1,777,000*l.*, equal to 0·37 per cent. Put in the reverse way, the cost of our imports was on the average 0·37 per cent. greater in 1903 than in 1902. Applying the same method to our exports, the statement shows we received for British commodities sent abroad in 1903 a sum of 290,889,000*l.*, but that if these had realised the same average prices as obtained in 1902 the value would have been only 287,430,000*l.* Thus there was an increase due to higher prices amounting to 3,459,000*l.*, equal to 1·20 per cent. That is to say, we received in 1903 290,889,000*l.* for the same quantity of goods that we should have had to sell in 1902 for 287,430,000*l.* Bringing the totals together, the value of our foreign trade in 1903, exclusive of re-exports, was increased by 7,297,000*l.*, or 0·88 per cent., owing to higher prices. The calculation is as follows:—

	£
Value of net imports and of exports of British } products for 1903, calculated at prices of } 1902 .....	759,002,000
Actual value in trade and navigation returns.....	764,238,000
Increase due to higher prices in 1903 .....	5,236,000
	= 0·69 per cent.

“Finally it follows that of the total increase in our foreign trade, amounting to 18,238,000*l.*, more than two-thirds, or 13,002,000*l.*, was due to expansion in volume of business, and 5,236,000*l.* accrued from the higher prices of commodities in 1903 as compared with 1902.



(B.)—*Railway Traffic Receipts in 1902 and 1903.*

Subjoined is an analysis of the traffic receipts of fourteen of the principal English railways during the past two years:—

*First Half-Year.*

[00's omitted.]

	Passengers, Parcels, and Mails.		Merchandise.		Minerals.		Live Stock.	
	1903.	1902.	1903.	1902.	1903.	1902.	1903.	1902.
	£	£	£	£	£	£	£	£
London and N. Western	2,815.9	2,757.0	2,373.0	2,310.5	1,391.6	1,392.8	99.7	95.1
Great Western .....	2,537.1	2,475.7	1,404.6	1,409.0	1,510.5	1,443.0	77.1	72.8
Midland .....	1,748.7	1,662.3	2,204.6	2,129.6	1,496.2	1,537.6	48.0	44.6
North Eastern .....	1,331.0	1,322.2	1,450.3	1,423.8	1,467.0	1,408.0	51.1	50.2
Lancashire & Yorkshire	1,082.9	1,067.9	913.4	902.7	575.6	564.1	19.6	18.0
Great Northern .....	983.2	954.7	912.8	890.5	438.9	456.1	24.6	23.9
„ Eastern .....	1,377.7	1,339.9	795.2	790.0	281.7	278.3	50.0	43.9
London and S. Western	1,465.4	1,458.0	458.8	448.7	210.3	211.2	18.7	18.0
South Eastern and Chatham .....	1,503.7	1,462.1	312.4	309.1	190.2	195.9	9.0	11.6
London, Brighton, &c....	1,088.2	1,072.7	215.5	209.8	166.1	168.2	5.9	6.0
Great Central .....	461.7	432.1	588.3	554.6	474.7	490.8	11.6	10.1
North Staffordshire.....	127.1	127.1	140.5	138.7	155.8	154.8	2.5	2.3
Metropolitan .....	331.5	328.5	46.1	39.2	21.7	21.5	4	3
North London .....	159.5	159.4	68.6	71.5	29.0	27.2	8	8
<b>Total .....</b>	<b>17,013.6</b>	<b>16,619.6</b>	<b>11,884.1</b>	<b>11,617.7</b>	<b>8,409.3</b>	<b>8,349.5</b>	<b>419.0</b>	<b>397.6</b>
	+ £394.0		+ £266.4		+ £59.8		+ £21.4	

*Second Half-Year.*

[00's omitted.]

	1903.	1902.	1903.	1902.	1903.	1902.	1903.	1902.
	£	£	£	£	£	£	£	£
London and N. Western	3,362.9	3,409.4	2,382.1	2,431.7	1,483.6	1,502.9	137.1	148.7
Great Western .....	3,104.5	3,053.2	1,468.3	1,441.5	1,561.1	1,555.5	86.3	87.9
Midland .....	2,025.7	2,005.1	2,229.0	2,221.3	1,623.3	1,661.9	53.5	50.2
North Eastern .....	1,688.7	1,667.3	1,490.1	1,496.5	1,501.8	1,509.7	54.0	52.8
Lancashire & Yorkshire	1,238.8	1,265.0	921.5	959.5	573.4	580.8	21.4	23.0
Great Northern .....	1,178.6	1,178.9	935.0	924.7	485.1	518.1	23.3	22.8
„ Eastern .....	1,744.0	1,746.3	823.2	825.0	326.8	326.9	36.9	35.7
London and S. Western	1,718.4	1,725.9	497.9	490.2	224.4	219.1	23.2	23.2
South Eastern and Chatham .....	1,795.9	1,770.4	348.0	353.0	206.6	208.9	11.9	12.4
London, Brighton, &c....	1,297.1	1,315.9	236.6	231.5	176.8	180.6	6.4	6.3
Great Central .....	540.5	521.6	600.3	572.6	505.2	510.2	10.6	9.9
North Staffordshire.....	141.4	141.8	139.5	139.3	147.6	157.6	2.7	2.7
Metropolitan .....	338.3	331.7	49.3	45.9	25.0	24.3	4	5
North London .....	160.4	161.9	70.4	70.8	30.9	32.1	9	9
<b>Total .....</b>	<b>20,310.2</b>	<b>20,294.4</b>	<b>12,191.2</b>	<b>12,203.5</b>	<b>8,871.6</b>	<b>8,988.6</b>	<b>468.6</b>	<b>477.0</b>
	+ £15.8		- £12.3		- £117.0		- £8.4	

IV.—*English Literature in 1903.*

THE following particulars are taken from the *Publishers' Circular* of the 2nd January, 1904, in continuation of a series of similar extracts for previous years:—

*Analytical Table of Books Published in 1903.*

Subjects.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total of Books on each Subject for the Year.
Theology, sermons, biblical .....	* 36 † 3	42 9	49 8	53 4	55 2	51 5	25 5	43 7	42 3	70 2	86 4	87 11	639 68
Educational, classical, and philological .....	* 51 † 3	66 5	70 14	36 7	65 2	62 6	33 4	47 7	51 9	51 15	65 16	53 10	650 98
Juvenile works and tales, novels, tales, and other fiction.	* 97 † 28	98 50	150 67	87 94	135 85	98 64	94 50	155 44	169 52	296 102	347 108	133 57	1,859 801
Law, jurisprudence, &c. ....	* 7 † 2	5 3	8 3	3 5	4 5	6 1	3 1	3 1	1 1	1 1	5 1	11 6	57 30
Political and social economy, trade, and commerce ....	* 42 † 9	43 4	50 11	34 5	51 5	37 12	32 5	46 7	29 17	41 11	54 12	50 2	509 100
Arts, science, and illustrated works	* 27 † 4	26 3	32 6	26 1	38 1	50 2	17 —	24 1	35 2	21 3	46 4	71 5	413 32
Voyages, travels, geographical research .....	* 14 † 1	15 2	12 2	9 3	16 1	19 3	10 2	15 2	12 4	6 5	7 9	37 —	172 34
History, biography, &c. ....	* 40 † 7	42 13	31 8	27 5	58 9	35 4	33 4	38 4	18 6	42 5	60 6	58 20	482 91
Poetry and the drama .....	* 28 † 6	12 7	36 6	30 5	21 2	24 3	10 3	16 4	26 3	30 16	37 18	33 15	303 88
Year - books and serials in volumes		86	35	20	23	24	24	15	15	31	44	55	457
Medicine, surgery, &c. ....	* 13 † 3	9 7	14 9	13 7	15 1	20 5	18 7	23 7	6 11	13 13	18 14	25 11	187 95
Belles-Lettres, essays, monographs, &c. ....	* 19 † 1	13 2	23 7	9 2	21 2	31 1	11 3	19 3	20 3	39 2	46 3	33 2	284 31
Miscellaneous, including pamphlets, not sermons. ....	* 58 † 6	66 8	46 26	65 30	68 22	54 28	67 14	62 29	71 16	48 10	50 18	32 12	687 219
	591	585	708	583	708	645	466	622	638	887	1,089	859	906 8,381

\* New books.

† New editions.

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"The total number of books recorded in 1903 is about 100 below 1899 and 1898, 400 below 1897, and 1,000 above 1902; but there is an increase in recorded miscellaneous of about 500, and most of these are pamphlets at a few pence each; while there were about 300 sixpenny novels during the year, most of them, of course, 'new editions,' not new books. The total of fiction is about 100 more than in the previous year. Theology, educational, politics, and commerce are up in number, arts and sciences and law are down; history and biography, voyages and travels, about the same; medicine, year-books, belles-lettres, and poetry and the drama slightly up.

"The analytical table is divided into thirteen classes; also new books and new editions.

Divisions.	1902.		1903.	
	New Books.	New Editions.	New Books.	New Editions.
Theology, sermons, biblical, &c.....	567	81	639	63
Educational, classical, and philological....	504	68	650	98
Novels, tales, and juvenile works .....	1,743	727	1,859	801
Law, jurisprudence, &c. ....	88	46	57	30
Political and social economy, trade and } commerce .....	463	130	509	100
Arts, science, and illustrated works .....	420	44	413	32
Voyages, travels, geographical research ..	162	38	172	34
History, biography, &c. ....	480	57	482	91
Poetry and the drama.....	272	76	303	88
Year-books and serials in volumes .....	408	—	457	—
Medicine, surgery, &c. ....	153	84	187	95
Belles-Lettres, essays, monographs, &c.....	227	44	284	31
Miscellaneous, including pamphlets, } not sermons .....	352	147	687	219
	5,839	1,542	6,699	1,682
	7,381		8,381	

#### V.—Notes on Economical and Statistical Works.

*Report received from Mr. Henry Birchenough upon the Present Position and Future Prospects of British Trade in South Africa.* 160 pp. London: Eyre and Spottiswoode, 1903. 1s. 6d.

The Board of Trade took, we believe, a new departure when it sent Mr. Birchenough on a "Commercial Mission to South Africa." In this act a more frank intention was avowed to promote the interests of British trade than had hitherto been usual with Government departments. Mr. Birchenough himself brought to his inquiry an intimate acquaintance with the affairs of business

life. He was appointed to report upon the position and prospects of British trade. His observations were prompted by the wish to show our manufacturers and merchants the means by which they could retain a preponderance of the custom likely to arise in a new important district. His recommendations are directly pertinent to the practical object for which they are intended, and his information is at once apposite and opportune. His report will, we think, take a conspicuous place among the most valuable of official publications; and the novel experiment of the Board of Trade may, we hope, be but the first illustration of a practice of which we may see many repetitions in the future.

Mr. Birchenough was in South Africa for exactly fifteen weeks. He was unable to visit Rhodesia; but, with that exception, his report reviews the commercial possibilities of the whole of the country now included under British rule. He encountered, as he states, some difficulties of more or less importance, which did not admit of entire removal. "The commercial situation was still in an abnormal and transitional state." The war had dislocated business. The conclusion of peace had been followed by an expansion of trade; and the "feverish activity" then apparent had, at the time of his visit, given place to an "inevitable temporary slackness." To the effects of this exceptional factor was added the influence of two causes. The one was transitory, connected with the "immense sales by the military authorities of field force canteen stores." The other was the scarcity of labour, which would for "some time remain the dominating factor in the industrial and economic problems of South Africa." Other less important influences affecting the permanent value of the report are to be found in the changes in intercolonial relations likely to result from the Customs Agreement signed at Bloemfontein in March, 1903, which introduced a "common modified tariff for all the South African Colonies," and in the unfortunate dearth and lack of uniformity of statistics of imports and exports.

When these necessary deductions have been made, much valuable information has been supplied. It is the more valuable because the writer goes directly to the point, wastes no space on padding, and avoids over or under statement. On the one hand Mr. Birchenough shows how large and profitable a market is opening to British trade in Southern Africa. On the other he does not shrink from noting the failures of British manufacturers and merchants to turn the opportunity to full account. His advice is weighty because he discards indiscriminate blame, and notes the disadvantage due to accidental circumstance. We cannot discuss here the detailed evidence by which his argument is sustained both in the body of the report and in the appendix dealing *seriatim* with different trades. But the general remarks advanced upon the salient points disclosed are full of interest and instruction.

In the first place, there can be no doubt that South Africa furnishes opportunities for British trade which are already large and are capable of great expansion. At present none of the colonies has "any very important manufacturing industries."

"Practically the whole of their requirements in materials and manufactures are imported." Within ten years the total exports have increased "in value by nearly 250 per cent." In 1893 the exports of Great Britain to South Africa were less than 9,000,000*l.*; in 1902 they were nearly 26,000,000*l.* In 1893 South Africa was sixth on the list of customers of Great Britain; in 1902 she was second, and Mr. Birchenough anticipated that in 1903 she would pass beyond her sole remaining rival India. In 1902 she took almost a tenth of our total exports to the world and more than a quarter of those to British possessions. Nor can it be doubted that the country will continue to advance. The recent remarkable burst of trade is not due, as some pessimistic prophets have contended, to the passing need for quick replenishment of wealth depleted by the war. On the contrary, the steady progress accomplished in the past ten years was interrupted, first by the political uncertainty, and then by the war; and is now bound to continue. The older colonies already show a visible increase in comfort; and even the Kaffirs have acquired a taste for European food and clothes and for American furniture. The new dock and harbour accommodation demanded and the railway extensions planned or executed are not the least conspicuous or certain signs of growing trade. But the Transvaal is the real "pivot upon which the immediate commercial prosperity" of South Africa turns; and it is "difficult to speak of the eventual future" of that recent addition to the Empire "without appearing to use the language of exaggeration." "Undoubtedly that future depends upon the mineral wealth of the country." Nor is this wealth that arising merely from the gold reefs of the Rand, although those already worked represent "rather the opening than the closing of a great chapter in the history of gold production." But coal and iron have also been discovered, lying moreover in convenient situations. Nor indeed is gold-mining in South Africa so much a speculative venture as it is a solid commonplace unexciting industry. A most pressing difficulty is the scarcity of labour; but, that difficulty removed, "expansion would proceed with extraordinary rapidity." The mines offer accordingly the largest opportunities for trade, and the stimulus which, under favouring circumstances, they can give is remarkable. Yet railway extension, government expenditure on docks and harbours, public buildings and irrigation works, municipal outlay, including especially sanitation, which at present is wholly lacking, a changed and developed agriculture, and an extended demand for articles of ordinary domestic use, together with the creation of new private enterprises and large private building operations, are likely to add their custom to the requirements of the mining industry. Into the probable needs springing from these various sources Mr. Birchenough enters in detail in the first part of his report.

In the second he turns to another question equally important. That is the present extent and the future magnitude of foreign competition. He examines the reasons for the success achieved by foreigners, and suggests the methods by which it should be met. On

the one hand there can be no doubt that British traders now enjoy a vast preponderance of South African trade. Mr. Birchenough estimates that of the present imports Great Britain and British possessions supply from 75 to 80 per cent., and the United Kingdom alone 64 per cent., of the total. In some branches of trade, such as wearing apparel, our supremacy has not been questioned. In some, such as hardware and machinery, foreign competition is inroaching on our own domain. In some, such as agricultural implements, steel-frame construction for building purposes, and electrical engineering, we have been beaten hitherto by Americans and Germans. America indeed is our "most formidable rival present and future." Her trade is growing with rapidity, although her traders have selected the trades in which the natural resources of their country, or their previous experience, as in steel-frame construction, of conditions similar to those prevailing in South Africa, or their ingenuity and inventiveness, give them particular advantage. German competition is by contrast far less alarming. It has indeed been hindered for a time by the resentment caused by the attitude of the German nation during the recent war; but Mr. Birchenough does not see why it should not be kept in check indefinitely by reasonable activity and enterprise on the part of British manufacturers. "They have," he says, "a firm grip of the market," and "both sentiment and prejudice" are "in their favour."

But, on the other hand, they have not yet put forth "anything like" their full strength, at any rate in the competition for the supply of mining and electrical machinery in Johannesburg, which is the "great battle-field of competition in South Africa." It is true that American trade has been materially assisted by the lower freights at which British Steamship Companies have been lately carrying goods from New York by contrast with the higher charges made for carriage from British ports. It is also true that the Germans receive similar assistance from the low rates charged by their own railways for conveyance from the place of manufacture to the port of shipment. But it must nevertheless be allowed, Mr. Birchenough declares, that American business men are more "flexible" than British manufacturers and merchants in the handling of their trade and in their dealings with their customers. Some of the complaints commonly urged against the latter are happily now anachronisms; and yet, in their close study of the special requirements of the market, in their readiness to incur initial expenditure to start and promote some promising trade connection, in the full and exact information furnished in their catalogues, in their general aptitude for effective advertisement, in promptitude of delivery, attractiveness of finish, and superiority of packing, and, finally, in the "standardisation" of their goods, Americans can give points to British traders. Nor have the latter yet adopted their modes of arranging or settling bargains to the special conditions of credit obtaining on the Rand, or secured efficient representatives upon the spot. The pertinent recommendations with which the report concludes are directed to improvement in these respects. Mr. Birchenough's "Mission" marks, we have said, a new

departure in the practice of the Board of Trade; his admirable performance of the responsible work committed to his charge affords convincing proof of the beneficial results which may be expected to follow from this innovation. L.L.P.

*Elements of Political Economy.* By J. Shield Nicholson. xvii + 538 pp., 8vo. London: Adam and Charles Black, 1903.

A text book on Economics of the size of that before us has long been needed. Excellent manuals have, it is true, been written within comparatively recent years both in America and on the Continent. General Walker's "Political Economy," for example, has for some time past been actually prescribed for examination in one of our older universities, and President Hadley's later "Economics" has won a deserved repute on the other side of the Atlantic, while M. Gide's brilliant and suggestive text book has been translated into our tongue by an American. But all these manuals naturally, and indeed necessarily, bear distinct traces of their foreign origin; and they do not take their phraseology or illustrations from the facts of English life or mould their mental attitude according to an English pattern. In our own country Professor Marshall has hitherto compelled his many admirers to remain content with but a fragment of a completed treatise, whether in the larger form of his "Principles" or in the smaller shape of his "Elements;" and Fawcett's well known manual was, with slight exceptions, a confessed abridgement of Mill's treatise. That book, indeed, has for many years occupied a monarchical position in the curricula of English economic instruction. But, although its merits have entitled it to the enduring homage of grateful recognition, it was written half a century ago, and Economics could furnish but a poor account of the progress accomplished in the interval were no emendations or additions needed to bring Mill's exposition up to date. For the purposes of a shorter text book it was, perhaps, always too long and full, and has been employed hitherto for lack of a satisfactory substitute.

For these reasons teachers and students alike were predisposed to give a favourable welcome to Professor Nicholson's book. For they would be glad to hear that so competent an economist and so lucid an expositor as Professor Nicholson had shown himself in his "Principles of Political Economy" had undertaken the no less difficult but no less urgent task of writing a shorter manual. To those familiar with Mill's treatise the Professor brings the additional recommendation that he adopts the same scheme of arrangement. In criticising his larger work we have had occasion to note elsewhere the objections which may be raised against this plan, in spite of the advantages by which we frankly admit it is attended. And similarly, in the case of the smaller book now before us, we cannot but feel that the explanation of the theory of value, contained in the opening chapters of the third section on exchange, might without inconvenience to author or injury to reader have been placed at the commencement of the work. Its position there would have accorded with the marked tendency of recent developments of

study, and Professor Nicholson's powers of easy lucid exposition seem to us to reach their highest level in these chapters. Nor, again, can we doubt that, in the smaller work at any rate, the space accorded to the fourth section on economic progress might with advantage have been curtailed, and secured for other topics. The class of students for whom such a manual is intended would, we believe, have gained by the introduction in its place into other chapters of some of that historical matter which Professor Nicholson has omitted, as he admits, from considerations of space alone.

But his chief error, as it seems to us, lies in the circumstance that he has to no small extent re-shaped his treatment, and re-cast his language, instead of making his book more strictly an abridgement of his larger treatise. In the first four sections he observes that the plan of re-writing has been followed. In the last or fifth section he has adopted the alternative method of omitting certain topics in preference to that of condensing the earlier argument. Perhaps indeed this process of omission might without great disadvantage have been extended to the concluding chapter on "Colonies and Dependencies;" for that chapter is not strictly needed in the smaller book, and it deals with an immediate (and perhaps passing) controversy in a very controversial mood. In this respect it is in striking contrast with some earlier chapters of the same section where Professor Nicholson repeats, with singular freedom from political bias, the qualifications of the ordinary assumptions of free trade doctrine which he had previously advanced in his larger work. But his whole book would, we think, have gained considerably in interest had it been more obviously an abstract of that larger work. This would, we are confident, have been the case whether the method of omission or that of condensation had been followed. For by re-writing Professor Nicholson has, we believe, increased rather than diminished the difficulty of the student. He seems to have been unable in some instances to resist the powerful temptation of explaining once again his present position on controverted points. He appears to assume in others the possession of knowledge hardly likely to belong to beginners. Had his aim been that of simplification only, he would, we do not doubt, have avoided these apparent defects.

In this criticism however we are conscious that we may be making inadequate allowance for the difficulty which must attend the preparation of such a book. What to omit, and what to include, what to treat briefly, and what to expound at length, what amount of knowledge may be safely presumed, and what instruction must be imparted—all these are problems which the writer of a manual is compelled to face, and may easily fail to overcome with complete satisfaction to his numerous critics. That Professor Nicholson is familiar with all the branches of his subject it would be impertinent to affirm. That he brings to the discussion of dry troublesome questions, which frighten many laymen from the prolonged and serious study of economics, the great attractions of a clear understanding, definite convictions, and literary skill, no one who has perused his "Principles" will dispute. In the book before us he has had a yet harder duty to perform than that accomplished in his



larger work, and it is easy to miscalculate the measure of success attained. L.L.P.

*The Common Sense of Municipal Trading.* By Bernard Shaw. vi + 120 pp., crown 8vo. Westminster: Archibald Constable and Co., 1904. 2s. 6d.

The last number of this *Journal* contained a notice of Major Darwin's "Municipal Trade." In the little book before us Mr. Bernard Shaw approaches the subject from a different standpoint. Major Darwin, it will be remembered, deprecated any large extension of municipal enterprise, and from a detached position he directed a searching unsparing criticism on many varieties of municipal trading already practised. Mr. Shaw, as we all know, is an avowed socialist, and he naturally blesses where Major Darwin cursed. He can indeed plead the qualification derived from the "practical knowledge" gained, as he characteristically says, by a "philosopher and playwright" like himself in the committee rooms of a "suburban vestry and borough council;" but, characteristically also, he thinks that the "common sense" which he here supplies would be sufficient guidance for an elector in registering his vote at the forthcoming elections in London, and he betrays none of the excessive anxiety shown by Major Darwin to place both sides of a disputed question before his readers. He skims the surface lightly where Major Darwin probes the inmost depths. He eludes rather than resolves perplexing and unwelcome problems. He hopes that nobody will be frightened from his book by the "notion" that the subject is "dry," instead of being, as he declares, "one of the most succulent in the whole range of literature," and he boasts that he has dispensed with figures. These claims, which are not unjust, are characteristic of Mr. Shaw's attitude of mind and of his treatment of his subject. We are hardly doing him an injustice when we say that his dexterous argument, presented thus attractively, produces an impression that his tongue is sometimes in his cheek. Yet his convictions are genuine and his enthusiasm is beyond suspicion: and, while he never fails to interest, and often amuses, he frequently instructs as well.

It is, for example, pertinent, though not wholly satisfactory, to contend, in answer to the criticism that municipal ventures are not always charged with their full share of the general cost of municipal management, that any balance sheet must be imperfect which does not include the influence, direct or indirect, of municipal action on the general welfare of the public, in promoting, for example, the social wellbeing of the community at large, and in preventing, in particular, the harm done by inadequate payment to certain grades of labourers. The difficulty raised, as in the case of electricity, by the insufficient size of the separate areas controlled by distinct municipalities, is shrewdly met by the assertion of a need for larger areas regulated by more comprehensive bodies. The reconstruction of local government, and not the surrender to private enterprise of such ventures, which demand an extensive sphere of operation, is Mr. Shaw's solution of the difficulty. No less shrewd is his objection

to the shortcomings alleged against municipal housing of the poor, for he pleads that municipal authorities are prevented at present by the Legislature from engaging in the more profitable varieties of such business, and are limited to the less remunerative. Equally acute is his remark that in modern business enterprise ownership is separated from management to an increased extent, and that municipalities can offer advantages in security of tenure, in assurance of pensions on retirement, and in regularity of work, which may tempt capable employees to enter their service for lower pay than that which they would accept in other walks of business life. Such keen and suggestive observations are mingled with more dubious reasoning and some special pleading, but Mr. Shaw has succeeded in writing a readable and informing pamphlet. He is not impartial, nor does he really pretend to the possession of this rare quality. L.L.P.

*Catalogue of Parliamentary Papers, 1801-1900.* vii + 316 pp., 4to. London: P. S. King and Son. 7s. 6d. net.

The publishers of this catalogue have rendered an useful service to the large class of economic and statistical students whose researches require the consultation of parliamentary papers. They justly claim that the "most important papers, diplomatic correspondence, the reports of commissions and select committees" are catalogued here in a form permitting easier reference than that allowed by the official general index. While this catalogue does not pretend to be exhaustive, in the sense of a complete enumeration of all the papers ordered to be printed by Parliament, it does attempt to furnish some idea of the contents, and not the name alone, of the most important of such papers, where the title by itself is insufficient for the purpose. It should be added that the wide margin of the paper on which the catalogue has been printed has been used in order to allow librarians or others to add references to particular papers included in their libraries. The catalogue, in short, seems admirably designed for the purpose for which it is intended, and we have no doubt that it will render effective aid in facilitating rapid and easy reference to the vast quantity of material on questions of government, on economics and on social subjects, which, the publishers remark, has been amassed by Parliament during the last century. Miss Hilda Vernon Jones, who is responsible for editing the catalogue, which is an amalgamation of a number of separate catalogues dealing with special subjects published during the last half century by Messrs. P. S. King and Co., prefaces the catalogue by a brief but interesting account of the history of the collection and publication of parliamentary papers. They were not sold as a matter of regular course to the public before 1836. In 1773 a selection of reports of committees which had not been printed in the journals of parliament was made, and published in four volumes. Eleven more volumes followed in 1803, and an index issued in the same year added a list of reports inserted in the journals of the House of Commons (from 1696 to 1800), but not reprinted in the fifteen volumes. In 1825 the reports of commissions

and other papers were recommended by a committee of the House to be added to the reports of committees to which the previous selections had been confined. In 1828, 1834 and 1835, select committees of either House in turn considered and reconsidered the question of printing and publishing parliamentary papers, and, finally, by May, 1837, the public circulation of such papers was established. L.L.P.

*The Farmer and Stock-Breeder Year-Book and Country Gentleman's Almanack for 1904.* 304 pp., 8vo. London: The Offices of the *Farmer and Stock-Breeder*, 1904. 1s.

The edition for the current year of this annual publication contains much interesting matter. It is, as the title indicates, mainly concerned with stock-breeding; and accounts are given for 1903 of the chief varieties of breeds of horses, cattle, sheep and pigs. But these accounts are supplemented by articles on topics of interest not only to breeders but also to farmers as a class. The New Farm Machinery of 1903, for instance, the Law of Agricultural Fences, the best modes of utilising Home Grown Cereals, and Recent Experiments in the Manuring of Crops, are some of these topics. The Future of Pony Breeding, the Jersey as a Farmer's Cow, Early Lamb and how to produce it, the Veterinary Uses of Salt, and Milk Records in Dairy Herds, are subjects treated in the Year Book which concern more especially the breeder. In a Chat about Ploughs Mr. W. M. Tod shows there is opening for improvement in the form of the oldest and least changed of agricultural implements. It should, as he contends, be adapted more closely than hitherto to the special requirements of different soils. In the Birth of the Botany Wool Trade, Mr. S. B. Hollings deals with a subject of historical interest. In Nests and how to make them, and in the Successful Preservation of Fresh Eggs, the authors handle questions of which the interest has grown with recent developments of poultry farming as a means of adding to a farmer's livelihood; for in altered circumstances he can rely less securely than in former days on the staple products of agricultural enterprise. From this brief notice it may be seen how varied and valuable is the information contained in this Year Book, which has now reached its fortieth year of publication; and an abundance of practical advice for the assistance of the working farmer is furnished under the direction of the editor, Mr. J. S. Macdonald. L.L.P

*National Progress in Wealth and Trade.* By A. L. Bowley. xiii + 88 pp., crown 8vo. London: P. S. King and Co., 1904. 2s.

Mr. Bowley's contribution in this small volume to the fiscal controversy is of modest dimensions; and the claim put forward in his preface is no less modest. He there describes his book as an "attempt to put in a concise and clear form the facts" of "our recent industrial history which seem to be established on fair evidence, irrespective of their competence to support any particular views of fiscal policy." It is also, he states, his intention to provide a "careful statement of the bounds of our positive knowledge of our

social and industrial conditions." Of the objects thus contemplated the latter is not the less prominent of the two, and we are reminded again and again of the great difficulty of reaching complete or even sufficient conclusions by means of the statistics which are available, and of the serious gaps necessarily left in the argument by the lack of figures which are not forthcoming. We may perhaps hope that one consequence of the general interest aroused in a subject on which statistical evidence is important, although Mr. Bowley, with characteristic fairness, observes that the "question is not one to be decided by statistics," may lead to their more abundant production and their more convenient compilation. This may perhaps be done by our own Government, and also by those of foreign countries, for their figures, Mr. Bowley notes, are even less trustworthy, as they cannot be similarly tested. The suggestions both of improvement and of addition made by him will, we may trust, before long receive the attention to which they are entitled; for, coming from him, they are not heedlessly put forward. They may in fact be treated as authoritative hints resting on the substantial basis of ripe experience and long consideration.

It is the expert knowledge which renders Mr. Bowley's book no less successful in the other aim intended by its author. He has known where to go for his material. He is sensible of its limitations, and is able to apply the exact measure to the inferences which may legitimately be drawn. He is conspicuously impartial in stating the precise conclusions which he thinks can be fairly established. A hostile critic might perhaps feel that Mr. Bowley is not wholly displeased when the statistics tell in favour of the side to which his sympathies incline; and his statement in his preface that our "information, so far as it goes, suggests that very remarkable and stable progress has been made in recent years in those aspects of national wellbeing which are generally considered as measuring prosperity," is significant. In his first chapter accordingly he examines the "progress of the nation" during the last twenty years as shown by changes in wages, in the national income, in the amount of employment and pauperism, in the consumption of necessaries, and in the growth of savings. The full extent of such progress, he urges, can only be appreciated when changes in prices are considered. "Average wages," he calculates, have risen 30 per cent. since 1881, the "average income of the nation" has advanced 20 per cent., "prices" have fallen 8 per cent., and "regularity of employment" has, "on the whole, improved."

In his second chapter he turns to the figures of "production, trade, and commerce," and here his candour and fairness are strikingly exhibited. For although he does not think that sure evidence is forthcoming of any failure of prosperity, he yet appears to confirm the existence of some retardation in the growth of our export trade to foreign countries. It would be wrong to say that he accepts the inference drawn from this "slackening," as it may be called, by advocates of an alteration in our fiscal system, but he none the less honestly allows and frankly states the testimony borne by recorded figures to the actual facts. His own summary is

thus expressed: "The total output of our manufactures," he says, "has increased greatly in recent years; the part exported to foreign nations has increased a little, that sent to the colonies considerably, but that retained for home consumption most." It should be noted that he refrains from pursuing his investigations into the question of the changes in the relative proportions of our exports of manufactures to foreign protected countries and to our own self-governing colonies. Yet this is perhaps the central issue of the fiscal controversy. Still, the quantity of valuable material which Mr. Bowley has contrived to present in a compact, convenient form, within the modest compass of less than a hundred pages, is as remarkable as is the scientific spirit of zeal to reach and state the truth which is apparent from the first page to the last. In his introduction he enters some general cautions on the use and interpretation of statistics, and in his conclusion he pleads for an impartial inquiry into the whole subject by a Royal Commission. His contribution to the discussion may be modest. It is, as he declares, "not controversial," but will also, we believe, prove of more than that "ephemeral" value which he not unjustly assigns to the "mass" of literature forthcoming on the question. L.L.P.

*Principi di Economia Politica.* By Camillo Supino. xi + 501 pp., 8vo. Naples: L. Pierro, 1904.

Professor Supino, in his preface, states that he aims at putting out in a clear and ordered fashion the principal theories of the science of political economy according to the most recent developments; and there is no question that he has succeeded in this task. His book is written in a most lucid style, and is clearly arranged. But the work unquestionably suffers from the defect of its quality. Lucidity and simplicity are not obtainable when the matter is very difficult, and the student who reads this book might possibly form too low an opinion of the difficulties of the science. Again, it is almost impossible to state all the actual facts of modern individual organisation, or of modern monetary system, within the short space of a moderate sized book without falling into same inaccuracies. Thus Professor Supino gives as an example of "simple monometallism, when one metal alone—usually silver—is in circulation," the case of India. Such a statement is misleading. It is true that the silver rupee forms the greater part of the circulating medium of India, but it is not, strictly speaking, correct to speak of the Indian currency as a silver monometallism; on the contrary, it is a currency with a gold standard and a paper and silver token currency. Of course Professor Supino is quite familiar with the facts of Indian currency, and has not in fact made a slip, but the actual statement in his book would unquestionably create an incorrect impression in the mind of an ignorant reader. On the other hand, he has performed a difficult task with great success. It is easy to criticise, but the difficulty of writing an elementary up-to-date treatise is only realised by those who have tried.

The scheme of the book is to begin with economic organisation; then to pass on to circulation—under which credit as well as

currency is treated—and then to conclude with distribution. He assists the reader who wishes for fuller information on any point by a short bibliography at the end of each section. Usually he refers to well known classical economists, and the references to quite modern American economists are rather meagre. This is no doubt due to the fact that the industrial organisation of America differs a good deal at the present time from that of Italy; but it is a pity that a more detailed consideration is not given to such questions as “charging what the trade will bear,” the export policy of mints, and other kindred topics, because, although these are not at present the matters of chief interest to the Italian reader, it is not impossible that the rapid economic development which is proceeding in Italy at the present time may bring such questions to the front in that country. In one respect Italy differs from most other countries, for the great development of economic science in that country is making strides in advance of the development of economic practice. C.P.S.

*Agricultural Returns, 1903. Produce of Crops in each County of Great Britain, with Summaries for the United Kingdom. Price 3d.*

This publication contains the complete statistics of the total produce and average yield per acre of the principal crops in Great Britain published by the Board of Agriculture and Fisheries, which was reproduced on p. 738 of the December *Journal*. Full details for each county in Great Britain are shown, with a summary of the total figures for Ireland, and tables giving the produce, acreage, and estimated yield for each year from 1893 to 1903 are also included, which enable comparisons to be made between the harvest of 1903 and that of each year in the preceding decade.

In the introductory memorandum a caution is given against treating the quantitative results—which alone can be expressed in these estimates—as a complete representation of the year's harvest, though the detailed reports received from the local estimators contain, it is stated, ample evidence that the serious effects of the wet weather which characterised the season of 1903 were fully recognised when they made their estimates of yield. It appears that if the time of ingathering had been favourable, the yield of all farm crops might have been generally satisfactory. As one estimator expressed it, the crops were bulky but the quality was inferior, the wet weather causing growth, but the lack of sunshine preventing development. Nor were there wanting—as usually happens under the diversified agricultural conditions of the British Isles—instances of widely different results, sometimes even in the same neighbourhood. One estimator, for example, mentions that 16 bushels and 40 bushels per acre of wheat were the two extremes which occurred in his district.

*Statistical and Economical Articles in Recent Periodicals.*

## UNITED KINGDOM—

*Economic Journal.* December, 1903—Preferential Tariffs and Canadian Interests: *A. W. Flux.* Economic Possibilities of an Imperial Fiscal Policy: *L. L. Price.* Taxation for Revenue as a canon of Public Finance: *C. F. Bastable.* On some neglected British Economists. II: *E. R. A. Seligman.* The Grain-milling Industry. II: *H. Macrosty.* The Railway Strikes in Holland: *N. G. Pierson.* The Use and Abuse of Authority in Economics: *J. S. Nicholson.* The Prices of Imports and Exports: *A. L. Bowley.* The new Coal-beds in Belgium: *L. Dechesne.* Working men's Dwellings in Germany: *W. H. Dawson.* Peasant-farming in Denmark: *E. Givskov.*

*Economic Review.* January, 1904—The American Trust: *J. A. Hobson.* Is Free Trade a Fallacy?: *R. E. Macnaghten.* The Failure of Free-Traders to attain their Ideal: *W. Cunningham.* The Belgian Labour Colonies: *H. J. Torr.*

*Journal of the Institute of Actuaries.* January, 1904—On the Comparative Mortality among Assured Lives of Abstainers and Non-Abstainers from Alcoholic Beverages: *R. M. Moore.*

*Board of Agriculture. Journal.* December, 1903—Ploughs and Ploughing: *P. McConnell.* Siberian Butter Industry.

*Department of Agriculture, Ireland. Journal.* December, 1903—Agricultural Co-operation in Germany: *H. de F. Montgomery.* Forest Economy and Forest Laws in Foreign Countries.

## UNITED STATES—

*American Statistical Association. Publications,* 1903—

June—A Statistical Study of Patients admitted at the Connecticut Hospital for Insane from the years 1868 to 1901: *R. H. Burr.*

September—December—Census Wage Inquiry:—Employees and Wages: *D. R. Dewey.* Note on Statistics of Prostitution in Cuba: *W. F. Willcox.*

*American Journal of Sociology.* January, 1904—The first German Municipal Exposition: *H. Woodhead.* A Model Municipal Department: *F. R. Cope.* The Sociology of Conflict: *G. Simmel.* Moot Points in Sociology. V: *E. A. Ross.* Introduction to Sociology. VII: *G. de Greef.* Note on Ward's "Pure Sociology." II: *A. W. Small.*

*Annals of the American Academy of Political and Social Science.* January, 1904—The Tariff and the Export Trade of the United States: *S. N. D. North.* Tariff relations of the United States and the Philippine Islands: *C. C. Plehn.* Protection, Expansion, and International Competition: *W. G. L. Taylor.* Industrial causes affecting American Commercial Policy since [the] Civil War: *J. E. Conner.* Reciprocity in the American Tariff System: *J. B. Osborne.* Main features of the present Foreign Trade of the United Kingdom: *S. Huebner.* Development of Mr. Chamberlain's Fiscal Policy: *T. W. Mitchell.* Foreign Railway events in 1902-03: *B. H. Meyer.*

## UNITED STATES—Contd.

*Journal of Political Economy.* December, 1903—Adjustment of Street-car men's wages in San Francisco: *C. C. Plehn*. Relative importance of our Foreign Trade: *W. G. L. Taylor*. American and European High-speed Trains: *G. G. Tunell*. Reasonable [Railway] Rates: *A. D. Adams*. Study of Comparative Legislation: *M. West*.

*Political Science Quarterly.* December, 1903—The Sugar Situation in Austria: *F. Walker*. Monopoly and the Struggles of Classes: *J. B. Clark*. Division of Governmental Power in Greece: *E. V. Robinson*. State Boards and Commissions: *F. H. White*. The Friars in the Philippines: *J. A. Le Roy*.

*Quarterly Journal of Economics.* February, 1904—The Theory of Distribution: *F. Y. Edgeworth*. The Ricardian Theory of Gold Movements and Professor Laughlin's views of Money: *A. C. Whitaker*. The Fund at Boston in New England: *A. McF. Davis*. The Massachusetts Business Corporation Law: *G. Calkins*. The Variation of Productive Forces: Further Comment: *A. W. Flux*. Canal Enlargement in New York State: *J. A. Fairlie*. Car Service Reform in the United States: *W. H. Price*.

*Yale Review.* February, 1904—The Problem of Monetary Reform in Mexico. A Suggestion: *M. W. Gaines*. A freer City. A plea for Municipal Home Rule: *C. R. Woodruff*. Workmen's Insurance in Germany. I: *J. B. Pinkus*. Recent State Constitution-making: *J. B. Phillips*. Recent tendencies in Economic Legislation: *E. D. Durand*.

*Monthly Summary of Commerce and Finance, 1903—*

*October*—Warehousing Industry in the United States. British and Foreign Trade and Industry. Commercial Cuba in 1903.

*November*—Annual Review of the Foreign Commerce of United States. Financial Tables: Failures in the United States and Average of Liabilities, 1875-1903.

*Bulletin of the Bureau of Labor.* No. 50, January, 1904—Labor Unions and British Industry: *A. M. Low*. Land values and ownership in Philadelphia: *A. F. Davies*.

## AUSTRIA—

*Statistische Monatschrift.* November—December, 1903—Der XI internationale Kongress für Hygiene und Demographie zu Brüssel, 2-8 September, 1903: *Dr. Zimmermann*. Volk und Wirtschaft in den Vereinigten Staaten zu Beginn des xx Jahrhunderts: *F. Somary*. Summarische Ergebnisse der gewerblichen Betriebszählung vom 3 Juni, 1902, in Österreich (*to be continued*). Ernteergebnisse der wichtigsten Körnerfrüchte im Jahre 1903.

## FRANCE—

*Annales des Sciences Politiques.* January, 1904—La France économique de 1848 à 1870: *E. Levasseur*. La lutte contre la tuberculose en France. I: *R. Savary et Dr. Collet*. Quarante ans de propriété collective. Paysans russes. I: *G. Alfassa*. La vie communale en Bohême. II: *V. Marcé*. Les Puissances maritimes en Méditerranée: *Z.* Chronique des questions agricoles, 1903: *D. Zolla*.



FRANCE—*Contd.**Journal des Economistes—*

*December, 1903*—L'évolution du protectionniste: *G. de Molinari*.  
Les chemins de fer aux États-Unis: *A. Raffalovich*. La  
centralisation économique: *P. Bonnaud*. L'Administration  
générale de l'assistance publique à Paris: *E. Letourneur*.

*January, 1904*—Le mouvement colonial en 1903: *D. Bellet*.  
Les taux de mortalité en matière d'assurance sur la vie:  
*E. Rochetin*.

*February, 1904*—L'Impôt dans les villes allemandes à la fin du  
moyen-âge: *E. Castelot*. La fabrique et l'ouvrier de fabrique  
en Russie: *L. Zabloudowski*. Agriculture et Libre-échange  
dans le Royaume-Uni: *E. Macquart*. Le socialisme municipal  
en Italie: *D. Bellet*. Les finances du Japon: *L. E. A. Millet*.

*Journal de la Société de Statistique de Paris—*

*December, 1903*—La statistique des valeurs à lots inscrites à la  
cote officielle des agents de change à la date du 1<sup>er</sup> janvier,  
1903: *A. Neymarck*. Classement et répartition des titres de  
l'emprunt de la ville de Paris de 1899, dit du Métropolitain:  
*Ed. Duval*. Questions de méthode statistique (*concluded*):  
*L. March*. Du poids comparatif des charges fiscales qui  
pèsent en France sur la propriété immobilière et sur les  
valeurs mobilières: *L. Vacher*.

*January, 1904*—Les valeurs mobilières en France (*continued in*  
*February*): *A. Neymarck*. Familles parisiennes en 1901  
(*concluded in February*): *L. March*.

*La Réforme Sociale, 1904—*

*No. 1*—La loi russe du 2 juin, 1903, sur l'assurance des  
ouvriers contre les accidents: *L. Skarzynski*. Les Institutions  
patronales des grandes compagnies de chemins de fer:  
*C. E. Louis*.

*No. 2*—Gentilshommes champêtres dans l'ancienne France:  
*F. Funck-Brentano*. Les nouvelles idées commerciales du  
Peuple anglais: *G. Blondel*.

*No. 4*—La terre et l'artisan sous l'ancien régime: *L. Rivière*.  
Un État de l'Ouest Américain—Le Wyoming: *A. Sayous*.

*No. 5*—La question agraire en Irlande à propos de la loi  
nouvelle: *L. Paul-Dubois*. Une visite à une nouvelle ville  
ouvrière: *C. E. Louis*.

*Revue d'Économie Politique—*

*August—September, 1903*—Un nouvel aspect du problème  
monétaire: *J. Dumas*. Isaac de Bacalan et les idées libre-  
échangistes en France vers le milieu du xviii<sup>e</sup> siècle (*con-*  
*cluded*): *Prof. Sauvaire-Jourdan*. La décadence de l'industrie  
linière et la concurrence victorieuse de l'industrie cotonnière  
(*concluded in next number*): *A. Aftalion*.

*October—November*—L'idée de concurrence en Économie politique:  
Étude d'histoire des idées économiques: *B. Raynaud*. Le  
problème économique de l'irrigation d'après un livre récent:  
*G. Gariel*.

## FRANCE—Contd.

*Revue d'Économie Politique—Contd.*

December—La question des banques d'émission en Suisse: Histoire et état actuel (*concluded in January*): J. Landmann.

La Notion de l'État (*concluded*): M. Heins.

January, 1904—L'industrie du charbon en Belgique et le nouveau bassin de la Campine: L. Dechesne.

February—La théorie des crises chez les socialistes contemporains: M. Bourguin. Sur l'interprétation économique de l'histoire: R. Dalla-Volta. La réforme monétaire au Mexique: A. E. Sayous.

## GERMANY—

*Archiv für Soziale Gesetzgebung und Statistik.* Heft 5 und 6. 1903  
—Zur Koalitionsfreiheit: M. v. Schulz. Landarbeiterfrage und Landflucht in England: H. Levy. Wohlfahrtseinrichtungen der Arbeitgeber: P. Mombert. Die Reichstagswahlen von 1898 und 1903. Eine statistische Studie: A. Braun. Register zu Band i-xviii des Archivs für soziale Gesetzgebung und Statistik.

*Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft.* Heft 1, 1904—Einzigkeit und Weiderholung geschichtlicher Tatsachen: K. Breysig. Der Entwurf eines preussischen Familienfideikommiss-Gesetzes: W. Wygodzinski. Noch einige Bemerkungen zum vorläufigen Entwurf eines preussischen Gesetzes über Familienfideikommiss: M. Sering. J. G. Büsch und seine Abhandlung von dem Geldumlauf: H. Sieveking. Die Stellung der Ingenieure in der heutigen Staatswirtschaft: L. Bernhard. Oran, Nordafrikas wichtigster Handelsplatz: B. Rathgen. Zur neuesten Entwicklung der amerikanischen Eisenindustrie. III: L. Glier. Die auswärtigen Handelsbeziehungen der österreich-ungarischen Monarchie am Anfang des 20 Jahrhunderts: W.H.

*Jahrbücher für Nationalökonomie und Statistik—*

December, 1903—Die Lage der englischen Landwirtschaft in der Gegenwart: H. Levy. Staatliche Gewerbeförderung und die sogenannten Trimbornschen Anträge: T. Hampke.

January, 1904—Grenznutzentheorie und Grenzwertlehre: W. Scharling. Die Sterblichkeit landwirtschaftlicher und gewerblicher Bevölkerungsgruppen in der Schweiz: H. Herkner. Die kontradiktorischen Verhandlungen im Reichsamt des Innern über den Verband deutscher Druckpapierfabriken: R. Liefmann. Fortschritte im landwirtschaftlichen Genossenschaftswesen Dänemarks: H. Levy.

*Zeitschrift für die gesamte Staatswissenschaft.* Heft 4, 1903—Untersuchungen über den Gesellschaftsbegriff zur Einleitung in die Soziologie: O. Spann. Der Methuenvvertrag. Englisch-Portugiesisches Handelsabkommen vom Jahre 1703: H. Schorer. Einige Methoden für Proportionalwahlen: J. Flodström. Uebersicht über die neuesten Verträge, Gesetze und Verordnungen mit Nachträgen.

**GERMANY—Contd.**
*Zeitschrift für Socialwissenschaft—*

*Heft 12, 1903*—Altes und Neues über die Menschenrassen in Europa: *O. Ammon*. Zur neueren Literatur über Effektenbanken: *A. Nussbaum*. Organisation und Wirken der deutschen Landwirtschaftsgesellschaft: *J. Croner*.

*Heft 1, 1904*—Der Nachwuchs der Begabten: *S. R. Steinmetz*. Die Landwirtschaft der Naturvölker (*continued in Heft 2*): *R. Lasch*. Die sterilen Ehen (*concluded in Heft 2*): *F. Prinzing*. Bodenpreis, Bodenrente und Betriebsintensität: *Fr. Brüssling*.

*Heft 2*—Zur Geschichte und Würdigung der Weltausstellungen: *L. O. Brandt*. Zollrückvergütung: *F. Lusensky*.

*Vierteljahrshefte zur Statistik des Deutschen Reichs. Heft 4, 1903*—Konkurs-Statistik, 1902. Zur deutschen Justizstatistik, 1902. Die Bergwerke, Salinen und Hütten, 1902. Die Schulbildung der Rekruten, 1902.

*Zeitschrift des K. Sächsischen Statistischen Bureaus. Heft 1 und 2, 1903*—Statistik der Urwahlen für die Zweite Kammer der Ständeversammlung in den Jahren 1897 bis 1901. Die Zahl der Gast- und Schankwirtschaften sowie der Kleinhandlungen mit Branntwein in den einzelnen Verwaltungsbezirken Sachsens im Jahre 1903: *G. Wächter*. Neue Sterblichkeitstafeln für die Gesamtbevölkerung des Königreichs Sachsen. II: *G. Zeuner*. Beiträge zur Statistik der Geburten, Eheschliessungen und Sterbefälle in den drei sächsischen Grossstädten (*conclusion*).

**ITALY—**
*Giornale degli Economisti, 1903—*

*December*—La Scienza economica ed i problemi sociali del nostro tempo: *A. Loria*. La questione finanziaria della capitale: *E. Branzoli-Zappi*. Alcune osservazioni sui sindacati e sulle leghe: *M. Pantaleoni*.

*January, 1904*—Gli aspetti arbitrari dell' interpolazione delle serie statistiche: *R. Benini*. Imperialismo, Protezionismo e Liberismo in Inghilterra (*continued in February*): *D. Statistica delle società co-operative esistenti nel 1902*: *G. Montemartini*.

*February*—Di alcune errate interpretazioni dell' ordine economico: *E. Cossa*. Le comparazioni nelle statistiche del commercio internazionale e le variazioni del valore monetario: *F. Coletti*. L' emigrazione italiana in Francia e i nuovi pericoli che la sovrastano: *L. Marchetti*. Colonizzazione libera e colonizzazione protetta: *G. Montemartini*.

*La Riforma Sociale, 1904—*

*January*—Di alcuni recenti studi di storia economica e finanziaria: *L. Einaudi*. I primi mesi di vita dell' ufficio del lavoro governativo: *A. Cabiati*. L' Operaio ebreo in Inghilterra: *L. Soloweitschik*.

*February*—La questione della navigazione interna nella valle del Po: *C. Supino*. La co-operazione in Italia: *A. Graziadei*. Il controllo sui rendiconti dei Comuni e delle Province: *L. Torretta*.

## SWITZERLAND—

*Journal de Statistique Suisse*, 1904—

*Lief. 1*—Die Mitwirkung der Schweiz an der Entwicklung des internationalen Postwesens und der Gründung des Allgemeinen Postvereins in den Jahren 1849-74: *C. Pasteur*. Notice statistique sur les sociétés anonymes. Über Karten der Volksdichte: *E. Brückner*.

*Lief. 2*—Die schweizerische Hausindustrie: *F. Schuler*. Valeur moyenne et estimative du bétail et des ruches d'abeilles en 1901. Some results of Swiss Census of 1900.

*Lief. 3*—Protokoll der Jahresversammlung des Verbandes schweizerischer amtlicher Statistiker und der schweizerischen statistischen Gesellschaft, September, 1903. Der Arbeiterschutz zu gunsten der Kinder und Frauen in der Schweiz: *F. Godlstein*. Marxismus und Arbeiterschutzgesetzgebung: *M. Büchler*. Unfallstatistik der Baugewerbekasse des Bezirkes Zürich: *H. Rüttimann*.

## VI.—Quarterly List of Additions to the Library.

*Additions to the Library during the Quarter ended 15th March, 1904, arranged alphabetically under the following heads:—(a) Foreign Countries; (b) India and Colonial Possessions; (c) United Kingdom and its Divisions; (d) Authors, &c.; (e) Societies, &c. (British); (f) Periodicals, &c. (British).*

The Society has received, during the past quarter, the current numbers—either quarterly, monthly, or weekly—of the periodical official publications dealing with the following subjects:—

**Consular Reports**—From United States and United Kingdom.

**Labour Reports, &c.**—From Austria-Hungary, Belgium, France, Germany, United States, New York State, Canada, New Zealand, and United Kingdom.

**Trade Returns**—From Argentina, Austria-Hungary, Belgium, Bulgaria, China, Egypt, France, Germany, Greece, Italy, Mexico, Netherlands, Russia, Spain, Sweden, Switzerland, United States, India, Canada, and United Kingdom.

**Vital Statistics**—From Argentina, Egypt, Germany, Italy, Netherlands, Roumania, Switzerland, United States (Connecticut and Michigan only), Queensland, South Australia, and United Kingdom.

**Vital Statistics of following Towns**—Buenos Ayres, Buda-Pesth, Brunn, Prague, Brussels, Copenhagen, Berlin, Bucharest, Moscow, Madrid, London, Manchester, Dublin, Edinburgh, and Aberdeen.

The Society has received during the past quarter the current numbers of the following unofficial Periodicals and Publications of Societies, &c., which are arranged under the Countries in which they are issued:—

**Denmark**—Nationaløkonomisk Tidsskrift.

**France**—Annales des Sciences Politiques. Économiste Français. Journal des Économistes. Monde Économique. Polybiblion, Parties Littéraire et Technique. Réforme Sociale. Le Rentier. Revue d'Économie Politique. Revue de Statistique. Journal de la Société de Statistique de Paris.

**Germany**—Allgemeines Statistisches Archiv. Archiv für Soziale Gesetzgebung und Statistik. Deutsche Oekonomist. Jahrbuch für Gesetzgebung, Verwaltung, und Volkswirtschaft. Jahrbücher für Nationalökonomie und Statistik. Zeitschrift für die gesamte Staatswissenschaft. Zeitschrift für Socialwissenschaft. Mittheilungen aus der Handelskammer Frankfurt a. M.

**Italy**—L'Economista. Giornale degli Economisti. Rivista Italiana di Sociologia. Riforma Sociale.

**Sweden**—Ekonomisk Tidskrift.

**Switzerland**—Journal de Statistique suisse.

**United States**—American Journal of Sociology. Banker's Magazine. Bradstreet's. Commercial and Financial Chronicle, with supplements. Engineering and Mining Journal. Journal of Political Economy. Political Science Quarterly. Quarterly Journal of Economics. Yale Review. American Academy of Political and Social Science, Annals. American Economic Association, Economic Studies and Publications. American Geographical Society, Bulletin. American Statistical Association, Quarterly Publications. American Philosophical Society, Proceedings and Transactions. Columbia University, Studies in History, &c.

**India**—Indian Engineering. Asiatic Society of Bengal, Journal and Proceedings.

**Canada**—The Chronicle: Insurance and Finance.

**New Zealand**—Government Insurance Recorder. Trade Review and Price Current.

**United Kingdom**—The Accountant. Accountants' Magazine. Athenæum. Automobile Club Journal. Australian Trading World. Bankers' Magazine. Broomhalls' Corn Trade News. Browne's Export List. Colliery Guardian. Commercial World. Economic Journal. Economic Review. Economist. Fireman. Incorporated Accountants' Journal. Insurance Record. Investors' Monthly Manual. Investors' Review. Joint Stock Companies' Journal. Labour Co-partnership. Licensing World. Local Government Journal. Machinery Market. Nature. Navy League, Journal. Policyholder. Post Magazine. Produce Markets' Review. Public Health. Publishers' Circular. Sanitary Record. The Secretary. Shipping World. Statist. The Times. Tuberculosis. West Africa. Anthropological Institute, Journal. Cobden Club, Leaflets. East India Association, Journal. Howard Association, Leaflets, &c. Institute of Actuaries, Journal. Institute of Bankers, Journal. Institution of Civil Engineers, Minutes of Proceedings. Iron and Steel Institute, Journal. Lloyd's Register of British and Foreign Shipping, Statistical Tables. London Chamber of Commerce, Journal. London University Gazette. Manchester Literary and Philosophical Society, Memoirs and Proceedings. Royal Agricultural Society, Journal. Royal Asiatic Society, Journal. Royal Colonial Institute, Proceedings and Journal. Royal Geographical Society. Geographical Journal. Royal Irish Academy, Proceedings and Transactions. Royal Meteorological Society, Meteorological Record and Quarterly Journal. Royal Society, Proceedings. Royal United Service Institution, Journal. Sanitary Institute, Journal. Society of Arts, Journal. Statistical and Social Inquiry Society of Ireland, Journal. Surveyors' Institution, Professional Notes and Transactions. Trade Circulars.

## (a) Foreign Countries.

**Argentine Republic—**

- Buenos Ayres (Province). Direccion General de Estadistica. Boletin mensual. (Current numbers)* } The Provincial Statistical Bureau

**Austria-Hungary—**

- Ackerbau-Ministeriums. Statistisches Jahrbuch des k.k. (Current numbers.) 1903 ..... } The Ministry of Agriculture  
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Newspaper Press Directory. 59th annual issue. 1904. Map .....	Messrs. C. Mitchell and Co.
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Colonial Office List for 1904 .....	
County Councils, &c., Companion for 1904.....	
Financial Reform Almanack for 1904 .....	
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Howe's Classified Directory for 1904 .....	
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Stock Exchange Year-Book for 1904 .....	
Whitaker's Almanack for 1904 .....	
Who's Who, 1904 .....	

## VII.—PERIODICAL RETURNS.

### REGISTRATION OF THE UNITED KINGDOM.

#### No. I.—ENGLAND AND WALES.

MARRIAGES—To 30TH SEPTEMBER, 1903.

BIRTHS AND DEATHS—To 31st DECEMBER, 1903.

*A.—Serial Table of MARRIAGES, BIRTHS, and DEATHS, returned in the Years 1903-1897, and in the QUARTERS of those Years.*

*Calendar YEARS, 1903-1897:—Numbers.*

Years .....	1903.	'02.	'01.	'00.	1899.	'98.	'97.
Marriages No.	—	261,386	259,400	257,480	262,334	255,379	249,145
Births..... „	947,949	942,822	929,807	927,062	928,646	923,165	921,683
Deaths .... „	514,450	537,080	551,585	587,830	581,799	552,141	541,487

*QUARTERS of each Calendar Year, 1903-1897.*

(I.) MARRIAGES:—Numbers.

<i>Qrs. ended last day of</i>	1903.	'02.	'01.	'00.	1899.	'98.	'97.
March..... No.	45,497	53,896	43,862	43,917	44,512	45,143	44,708
June ..... „	72,964	62,377	72,173	71,518	72,389	70,108	68,844
September „	71,892	71,448	72,201	69,772	72,016	66,497	65,927
December „	—	73,665	71,164	72,273	73,417	73,631	69,666

(II.) BIRTHS:—Numbers.

<i>Qrs. ended last day of</i>	1903.	'02.	'01.	'00.	1899.	'98.	'97.
March..... No.	235,165	232,436	231,161	239,987	231,147	231,680	235,282
June ..... „	241,652	236,879	233,548	234,644	239,409	232,449	226,348
September „	241,125	241,054	235,580	232,579	231,829	235,088	234,452
December „	230,007	232,453	229,518	219,852	226,261	223,948	225,601

(III.) DEATHS:—Numbers.

<i>Qrs. ended last day of</i>	1903.	'02.	'01.	'00.	1899.	'98.	'97.
March..... No.	138,275	151,275	146,137	181,290	147,356	150,705	143,323
June ..... „	123,594	132,241	128,570	141,563	131,749	127,149	126,318
September „	116,607	115,244	139,615	133,074	153,719	141,712	139,079
December „	135,974	138,320	137,263	131,903	148,975	132,575	132,767

*Annual Rates of MARRIAGES, BIRTHS, and DEATHS, per 1,000 PERSONS LIVING in the Years 1903-1897, and in the QUARTERS of those Years.*

*Calendar YEARS, 1903-1897 :—General Ratios.*

YEARS.....	1903.	Mean '93-1902.	1902.	'01.	'00.	1899.	'98.	'97.
Estmtd. Popln. of England and Wales in thousands in middle of each Year....	33,378,	—	32,998,	32,621,	32,249,	31,881,	31,518,	31,158,
Persons Mar- ried .....	—	15'7	15'8	15'0	16'0	16'5	16'2	16'0
Births .....	28'4	29'4	28'6	28'5	28'7	29'1	29'3	29'6
Deaths.....	15'4	17'6	16'3	16'9	18'2	18'2	17'5	17'4

*QUARTERS of each Calendar Year, 1903-1897.*

*(I.) PERSONS MARRIED :—Ratio per 1,000.*

Qrs. ended last day of	1903.	Mean '93-1902	1902.	'01.	'00.	1899.	'98.	'97.
March .....	11'1	11'5	13'2	10'0	11'0	11'3	11'6	11'6
June.....	17'5	16'8	15'2	17'7	17'8	18'2	17'8	17'7
September .....	17'1	16'8	17'2	17'6	17'2	17'9	16'7	16'8
December .....	—	17'6	17'7	17'3	17'8	18'3	18'5	17'7

*(II.) BIRTHS :—Ratio per 1,000.*

Qrs. ended last day of	1903.	Mean '93-1902	1902.	'01.	'00.	1899.	'98.	'97.
March .....	28'6	30'1	28'6	28'7	30'2	29'4	29'8	30'6
June.....	29'0	29'7	28'8	28'7	29'2	30'1	29'6	29'1
September .....	28'7	29'3	29'0	28'7	28'6	28'8	29'6	29'0
December .....	27'3	28'5	27'9	27'9	27'0	28'2	28'2	28'7

*(III.) DEATHS :—Ratio per 1,000.*

Qrs. ended last day of	1903.	Mean '93-1902.	1902.	'01.	'00.	1899.	'98.	'97.
March .....	16'8	19'7	18'6	18'2	22'8	18'7	19'4	18'7
June.....	14'9	16'6	16'1	15'8	17'6	16'6	16'2	16'3
September .....	13'9	16'9	13'9	17'0	16'4	19'1	17'8	17'7
December .....	16'2	17'3	16'6	16'7	16'2	18'5	16'7	16'0

**B.—Special Town Table:—POPULATION; BIRTH-RATE and DEATH-RATE in each Quarter of 1903, in the SEVENTY-SIX Large Towns.**

Cities and Boroughs.	Estimated Population in the Middle of the Year 1903.	Annual Rate to 1,000 Living during the Thirteen Weeks ending							
		4th April, 1903. (1st Quarter.)		4th July, 1903. (2nd Quarter.)		3rd Oct., 1903. (3rd Quarter.)		2nd Jan., 1904. (4th Quarter.)	
		Births.	Deaths.	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
Seventy-six towns	15,075,011	30·1	17·3	30·2	15·3	29·8	15·1	28·6	17·3
<i>Including—</i>									
London* .....	4,613,812	29·1	17·3	29·0	14·7	28·4	14·1	27·4	16·6
West Ham .....	281,894	34·6	16·6	33·1	13·0	34·4	14·3	32·8	17·1
Croydon .....	141,157	26·3	14·6	27·1	10·4	25·8	9·6	26·2	12·8
Brighton .....	125,405	24·7	15·3	24·5	14·0	24·8	13·1	23·5	14·7
Portsmouth .....	194,960	27·4	14·6	28·6	13·4	27·4	14·2	28·4	16·8
Plymouth .....	112,022	25·2	18·3	26·6	15·4	25·6	14·3	24·6	18·0
Bristol .....	338,895	27·6	16·5	28·3	13·3	27·1	12·0	26·6	15·4
Cardiff .....	172,598	31·3	15·8	31·5	13·1	30·9	11·7	28·3	15·4
Swansea .....	95,489	33·6	19·7	32·8	19·7	31·8	15·3	30·0	19·7
Wolverhampton	96,947	32·0	15·4	30·1	16·2	30·3	13·7	29·4	16·8
Birmingham .....	533,039	32·3	19·1	31·9	16·4	32·2	16·4	30·7	19·2
Norwich .....	114,351	28·9	17·2	27·7	14·2	27·5	12·7	27·3	16·8
Leicester .....	220,272	27·4	14·6	28·4	12·9	26·8	13·9	26·8	15·5
Nottingham .....	245,985	26·3	17·8	29·9	16·9	29·3	15·7	27·9	17·4
Derby .....	118,707	27·6	18·9	27·9	12·9	27·5	13·0	25·6	14·5
Birkenhead .....	113,598	31·0	16·1	32·0	14·9	31·4	19·8	28·7	16·2
Liverpool† .....	716,810	33·7	21·6	33·7	19·6	33·9	19·7	32·4	21·2
Bolton .....	173,401	28·7	17·4	27·1	16·6	25·6	18·3	26·6	17·5
Manchester .....	553,486	32·5	21·4	33·0	19·5	32·7	18·4	30·1	19·6
Salford .....	226,480	31·6	19·7	31·8	17·3	33·8	17·8	31·8	21·0
Oldham .....	138,786	27·2	20·3	25·0	19·0	26·8	15·3	23·5	19·9
Burnley .....	99,469	28·2	19·1	27·7	18·1	27·1	18·6	25·9	20·8
Blackburn .....	131,218	24·2	16·9	28·3	15·8	25·6	12·9	22·5	17·3
Preston .....	114,404	30·2	18·8	32·0	16·6	31·5	15·8	27·9	23·6
Huddersfield ....	94,963	22·6	18·7	24·7	16·8	23·2	14·8	24·6	16·6
Halifax† .....	106,754	22·4	17·0	21·5	14·1	21·3	13·1	19·2	15·9
Bradford .....	283,412	23·7	17·6	23·6	15·2	23·7	14·3	22·3	18·6
Leeds .....	443,559	29·3	16·4	29·8	15·2	29·6	15·6	28·8	19·0
Sheffield .....	425,528	33·5	17·5	33·3	18·4	33·4	20·9	32·6	17·6
Hull .....	249,639	30·5	17·3	32·2	15·6	32·5	18·5	30·1	16·3
Sunderland .....	148,572	36·8	19·9	36·2	19·7	34·1	18·7	33·3	21·5
Gateshead .....	115,531	35·0	16·5	37·4	13·6	36·0	17·5	34·6	19·4
Newcastle .....	222,241	32·2	20·1	31·8	16·8	31·7	19·8	28·8	20·1

\* Including deaths of Londoners in the Metropolitan workhouses, hospitals, and lunatic asylums outside the County of London, but excluding deaths of non-Londoners in the London Fever Hospital, the Metropolitan Asylums Hospitals, and the Middlesex County Lunatic Asylum, within the County of London. The deaths in the other towns have been similarly corrected.

† As extended in 1902.

**C.—Divisional Table:—MARRIAGES in the Year ending 30th September; and BIRTHS and DEATHS in the Year ending 31st December, 1903, as Registered Quarterly.**

1 DIVISIONS. (England and Wales.)	2 AREA in Statute Acres.	3 Enumerated POPULATION, 1901.	4 5 6 7 MARRIAGES in Quarters ending			
			31st December, 1903.	31st March, 1903.	30th June, 1903.	30th September, 1903.
		No.	No.	No.	No.	No.
<b>ENGLD. &amp; WALES....Totals</b>	37,327,479	32,527,843	73,665	45,497	72,964	71,892
I. London .....	74,839	4,536,541	11,520	6,722	11,002	11,855
II. South-Eastern .....	3,994,374	3,311,617	7,484	4,163	6,798	6,718
III. South Midland .....	3,247,169	2,181,174	4,742	2,494	4,494	4,685
IV. Eastern .....	3,126,517	1,892,299	4,448	2,160	3,627	3,649
V. South-Western .....	5,023,292	1,913,393	3,697	2,617	3,956	3,658
VI. West Midland .....	4,051,707	3,679,594	8,523	4,806	8,417	8,080
VII. North Midland .....	3,495,711	2,042,406	4,695	2,725	5,170	4,336
VIII. North-Western .....	1,911,104	5,212,156	11,090	8,083	12,068	12,463
IX. Yorkshire .....	3,721,094	3,596,325	8,087	5,149	8,233	8,055
X. Northern .....	3,536,522	2,129,051	4,469	3,401	4,876	4,347
XI. Monmthsh. & Wales	5,145,150	2,033,287	4,615	3,177	4,323	4,046

8 DIVISIONS. (England and Wales.)	9 10 11 12 BIRTHS in each Quarter of 1903 ending				13 14 15 16 DEATHS in each Quarter of 1903 ending			
	31st March.	30th June.	30th Septem- ber.	31st Decem- ber.	31st March.	30th June.	30th Septem- ber.	31st Decem- ber.
	No.	No.	No.	No.	No.	No.	No.	No.
<b>ENGLD. &amp; WALES....Totals</b>	235,165	241,778	241,125	230,007	138,275	123,594	116,607	135,974
I. London .....	33,422	33,327	32,646	31,511	19,234	16,437	15,772	18,616
II. South-Eastern .....	20,453	21,193	21,517	20,535	12,490	10,680	10,111	11,271
III. South Midland .....	14,698	15,355	15,567	14,510	8,400	7,164	6,481	7,679
IV. Eastern .....	13,652	14,226	14,180	13,509	7,406	6,365	6,198	7,137
V. South-Western .....	11,166	11,476	11,402	10,956	7,980	6,684	5,569	6,828
VI. West Midland .....	27,765	28,331	27,994	27,003	15,895	13,879	12,551	15,528
VII. North Midland .....	14,928	15,560	15,518	15,021	8,228	7,640	6,916	8,348
VIII. North-Western .....	38,482	39,573	39,706	37,762	24,201	22,880	21,868	24,552
IX. Yorkshire .....	25,976	26,877	27,146	25,977	15,167	14,460	14,615	16,644
X. Northern .....	18,006	18,976	18,526	17,491	9,783	8,811	9,019	10,657
XI. Monmthsh. & Wales	16,617	16,884	16,923	15,732	9,491	8,644	7,507	8,714

**E.—Comparative Table of CONSOLS, PROVISIONS, COAL, and PAUPERISM in each QUARTER of 1901-02-03.**

Cols...	1	2	3	4	5	6	7	8				
Quarter ended	Average Prices of										PAUPERISM.	
	CONSOLS (for Money) per 100l. Stock.*	Average Minimum Rate per Cent. of DISCOUNT Charged by the Bank of England.*	WHEAT per Quarter.†	Price per Pound at the Metropolitan Cattle Market (Sinking the Offal).‡						Average Price of Seaborne COAL per Ton in the London Market.§	Average Number of PAUPERS Relieved on the Last Day of each Week.	
				Beef.			Mutton.				In-door.	Out-door.
				In- ferior Qual- ity.	Sec- ond Qual- ity.	First Qual- ity.	In- ferior Qual- ity.	Sec- ond Qual- ity.	First Qual- ity.			
1901	£ s. d.	£	s. d.	d.	d.	d.	d.	d.	s. d.			
Mar. 31	96 15 3	4.47	26 3	3½	5½	6½	5	7½	9	21 5	215,957	492,189
June 30	94 4 11	3.76	27 1	3½	5½	6½	4½	7½	8½	18 11	200,924	483,010
Sept. 30	93 11 7	3.00	26 11	3½	6	6½	4½	7½	8½	17 5	196,848	477,564
Dec. 31	92 10 10	3.67	26 7	3½	6	7½	4½	7½	8½	19 5	212,667	482,243
1902												
Mar. 31	94 3 8	3.32	27 3	3½	5½	7	5½	7½	8½	18 9	221,977	498,636
June 30	95 9 2	3.00	29 10	4½	6½	7½	5½	7½	9	17 4	206,911	487,522
Sept. 30	94 17 4	3.00	30 2	4½	6½	7½	5½	7½	8½	17 4	202,865	484,121
Dec. 31	92 19 4	3.99	25 -	4½	6½	7½	5½	7½	8½	18 9	219,166	490,391
1903												
Mar. 31	92 6 10	4.00	25 2	4½	6½	7½	5½	8½	9½	17 10	230,105	507,292
June 30	91 12 8	3.70	26 11	4½	6	6½	5½	7½	8½	15 6½	216,372	491,722
Sept. 30	90 13 6	3.29	28 8	4½	6½	6½	5½	7½	8½	15 6½	211,111	486,375
Dec. 31	88 9 8	4.00	26 3	3½	5½	6½	5½	7½	8½	15 11½	229,229	496,350

\* The prices of Consols and the Rate of Discount are furnished by the Chief Cashier of the Bank of England. Up to 31st March, 1903, the prices of Consols relate to stock bearing 2½l. per cent. interest; since that date, to stock bearing 2½l. per cent. interest.

† As published by the Board of Agriculture.

‡ Furnished by the Board of Agriculture.

§ The prices of coal are furnished by the Mineral Statistics Department of the Home Office.

|| Sunderland and Hartlepool coal only.

**F.—ANNUAL DEATH-RATES per 1,000 from ALL CAUSES and from certain EPIDEMIC DISEASES during the Fourth Quarter of 1903.**

Cols.....	1	2	3	4	5	6	7	8	9	10
	All Causes.	Diseases in Cols. 3—9.	Small- Pox.	Measles.	Scarlet Fever.	Diph- theria.	Whoop- ing Cough.	Fever.	Diar- rhoea.	Deaths under 1 Year per 1,000 Births.
England and Wales....	16.2	1.43	0.01	0.26	0.12	0.17	0.24	0.14	0.49	154
76 great towns .....	17.3	1.66	0.01	0.32	0.12	0.19	0.26	0.15	0.61	167
103 smaller towns ....	15.5	1.50	0.01	0.34	0.12	0.15	0.24	0.14	0.50	163
England and Wales, less the 179 towns }	15.2	1.19	0.01	0.19	0.11	0.16	0.22	0.12	0.38	136



## No. II.—SCOTLAND.

## BIRTHS, DEATHS, AND MARRIAGES, IN THE YEAR

ENDED 31ST DECEMBER, 1903.

**I.—Serial Table :—Number of BIRTHS, DEATHS, and MARRIAGES in Scotland, and their Proportion to the Population estimated to the Middle of each Year, during each Quarter of the Years 1903-1899 inclusive.**

	1903.		1902.		1901.		1900.		1899.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
<b>1st Quarter—</b>										
Births .....	82,109	2·84	31,801	2·85	32,062	2·90	33,134	3·03	30,909	2·86
Deaths .....	20,931	1·85	22,218	1·99	21,343	1·93	26,106	2·39	22,866	2·11
Marriages ..	7,727	0·68	7,043	0·63	6,940	0·63	7,380	0·67	7,248	0·67
<b>Mean Temperature }</b>	39°·9		37°·9		37°·4		36°·0		38°·4	
<b>2nd Quarter—</b>										
Births .....	36,377	3·19	34,697	3·07	34,646	3·10	34,346	3·10	34,976	3·19
Deaths .....	19,020	1·67	20,771	1·84	20,029	1·79	19,651	1·78	19,451	1·78
Marriages ..	8,515	0·75	8,575	0·76	8,185	0·73	8,370	0·76	8,615	0·79
<b>Mean Temperature }</b>	47°·9		47°·4		50°·0		50°·0		48°·9	
<b>3rd Quarter—</b>										
Births .....	32,928	2·85	33,263	2·91	33,565	2·97	32,922	2·94	32,931	2·98
Deaths .....	16,609	1·44	16,022	1·40	18,758	1·66	17,208	1·54	18,730	1·69
Marriages ..	8,235	0·72	8,021	0·70	8,257	0·73	7,965	0·71	8,363	0·76
<b>Mean Temperature }</b>	54°·2		53°·8		58°·0		56°·2		57°·0	
<b>4th Quarter—</b>										
Births .....	32,085	2·78	32,489	2·84	31,905	2·82	30,953	2·77	31,840	2·88
Deaths .....	19,418	1·68	18,935	1·66	19,973	1·77	19,302	1·72	18,501	1·67
Marriages ..	7,843	0·68	8,239	0·72	7,978	0·71	8,734	0·78	8,709	0·79
<b>Mean Temperature }</b>	41°·7		43°·3		41°·3		43°·4		43°·8	
<b>Year—</b>										
Population ..	4,579,223		4,531,299		4,483,880		4,436,958		4,390,530	
Births .....	133,499	2·92	132,250	2·92	132,178	2·95	131,855	2·96	130,656	2·98
Deaths .....	75,973	1·66	77,946	1·72	80,103	1·79	82,267	1·85	79,548	1·81
Marriages ..	32,320	0·71	31,878	0·70	31,360	0·70	32,449	0·73	32,935	0·75

**II.—Special Average Table:—Number of Births, Deaths, and Marriages in Scotland and in the Town and Country Districts for each Quarter of the Year ending 31st December, 1908, and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.**

Registration Groups of Districts.	Total Births.		Illegitimate Births.		Deaths.		Marriages.	
	Number.	Annual Rate per Cent.	Number.	Per Cent. of Total Births.	Number.	Annual Rate per Cent.	Number.	Annual Rate per Cent.
<b>1st Quarter—</b>								
SCOTLAND .....	32,109	2·84	2,036	6·3	20,931	1·85	7,727	0·68
Principal towns ....	15,034	3·01	937	6·2	9,926	1·98	3,906	0·78
Large „ ....	4,451	3·04	221	5·0	2,648	1·81	1,087	0·74
Small „ ....	6,448	2·84	357	5·5	3,970	1·75	1,540	0·68
Mainland rural ....	5,570	2·45	486	8·7	3,907	1·72	1,059	0·47
Insular „ ....	606	2·13	35	5·8	480	1·69	135	0·48
<b>2nd Quarter—</b>								
SCOTLAND .....	36,377	3·19	2,029	5·6	19,020	1·67	8,515	0·75
Principal towns ....	17,067	3·37	935	5·5	8,911	1·76	4,585	0·91
Large „ ....	5,112	3·45	225	4·4	2,479	1·67	1,106	0·75
Small „ ....	7,827	3·19	377	5·1	3,544	1·54	1,477	0·64
Mainland rural ....	6,322	2·75	458	7·2	3,621	1·58	1,287	0·56
Insular „ ....	559	1·95	34	6·1	465	1·62	60	0·21
<b>3rd Quarter—</b>								
SCOTLAND .....	32,928	2·85	2,140	6·5	16,609	1·44	8,235	0·72
Principal towns ....	15,100	2·95	959	6·4	7,802	1·53	4,717	0·92
Large „ ....	4,561	3·04	206	4·5	2,155	1·44	1,171	0·78
Small „ ....	6,665	2·87	393	5·9	3,156	1·36	1,352	0·58
Mainland rural ....	5,922	2·55	548	9·3	3,041	1·31	989	0·40
Insular „ ....	680	2·34	34	5·0	455	1·57	56	0·19
<b>4th Quarter—</b>								
SCOTLAND .....	32,085	2·78	1,978	6·2	19,413	1·68	7,843	0·68
Principal towns ....	14,834	2·90	895	6·0	9,217	1·80	4,044	0·79
Large „ ....	4,503	3·00	212	4·7	2,572	1·72	951	0·63
Small „ ....	6,463	2·79	389	6·0	3,787	1·68	1,422	0·61
Mainland rural ....	5,650	2·44	455	8·1	3,391	1·46	1,310	0·56
Insular „ ....	635	2·19	27	4·3	446	1·54	116	0·40

*Population of Scotland.*

Population.	Scotland.	Principal Towns.	Large Towns.	Small Towns.	Mainland Rural.	Insular Rural.
By Census of 1901.....	4,472,103	1,956,561	578,894	896,880	923,099	116,669
Estimated to the middle of 1908 .....	4,579,223	2,028,355	594,745	920,460	920,455	115,208

III.—*Divisional Table:—MARRIAGES, BIRTHS, and DEATHS Registered in the Year ended 31st December, 1903.*

(Compiled from the Registrar-General's Quarterly Returns.)

1	2	3	4	5	6
DIVISIONS. (Scotland.)	AREA in Statute Acres.	POPULATION, 1901. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
SCOTLAND ..... Totals	19,069,500	4,472,103	32,320	133,499	75,973
I. Northern .....	2,330,092	112,175	476	2,406	1,798
II. North-Western .....	4,671,744	162,728	679	3,523	2,740
III. North-Eastern .....	2,317,773	460,371	3,125	18,114	7,126
IV. East Midland .....	2,565,126	665,215	4,559	17,728	10,518
V. West Midland .....	2,576,404	352,981	2,106	10,142	5,721
VI. South-Western .....	1,440,676	1,862,775	14,935	63,932	33,947
VII. South-Eastern .....	1,168,149	662,415	5,185	18,272	10,969
VIII. Southern .....	1,999,536	193,443	1,255	4,382	3,154

No. III.—GREAT BRITAIN AND IRELAND.

SUMMARY of MARRIAGES, in the Year ended 30th September, 1903; and of BIRTHS and DEATHS, in the Year ended 31st December, 1903.

(Compiled from the Quarterly Returns of the respective Registrars-General.)

COUNTRIES.	[000's omitted.]		Marriages.	Per 1,000 of Popu- lation.	Births.	Per 1,000 of Popu- lation.	Deaths.	Per 1,000 of Popu- lation.
	Area in Statute Acres.	Population Middle 1903. Estimated.						
England and Wales .....	37,327,	No. 33,378,	No. 264,018	Ratio. 7·9	No. 947,949	Ratio. 28·4	No. 514,450	Ratio. 15·4
Scotland .....	19,070,	4,579,	32,716	7·1	133,499	29·2	75,973	16·6
Ireland .....	20,228,	4,414,	22,764	5·2	101,732	23·0	77,428	17·5
GREAT BRITAIN AND IRELAND	76,625,	42,371,	319,498	7·5	1,183,180	27·9	667,851	15·8

**Trade of United Kingdom, 1903-1902-1901.—Distribution of Exports\* from United Kingdom, according to their Declared Real Value; and the Declared Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.**

Merchandise (excluding Gold and Silver) Imported from, and Exported to, the following Foreign Countries, &c.	[000's omitted.]					
	1903.		1902.		1901.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
<b>I.—FOREIGN COUNTRIES.</b>	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark, and Iceland.....	63,762,	20,421,	56,379,	19,532,	51,696,	20,057,
Central Europe; viz., Germany, Holland, and Belgium.....	97,311,	41,058,	95,015,	39,706,	89,745,	40,819,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries).....	68,463,	24,437,	69,785,	24,019,	69,855,	25,512,
Southern Europe; viz., Italy, Austrian Empire, Greece, Roumania, Bulgaria, & Malta.....	11,956,	13,423,	14,778,	13,796,	10,233,	13,888,
Levant; viz., Turkey, Asiatic and European (including Cyprus), and Egypt.....	19,048,	12,060,	20,004,	12,275,	17,744,	13,197,
Northern Africa; viz., Tripoli, Tunis, Algeria and Morocco.....	1,682,	1,723,	1,796,	1,720,	1,726,	1,652,
Western Africa.....	720,	1,481,	698,	1,133,	685,	1,309,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorla Islands.....	600,	3,543,	574,	2,211,	533,	2,041,
Indian Seas, Siam, Sumatra, Java, Philip- pines; other Islands.....	2,996,	3,564,	2,900,	3,539,	3,247,	3,568,
South Sea Islands.....	212,	993,	248,	461,	241,	66,
China and Japan, including Hong Kong.....	5,568,	14,171,	4,918,	14,394,	4,558,	17,576,
United States of America.....	122,148,	22,613,	126,962,	23,761,	141,016,	18,437,
Mexico and Central America.....	1,548,	2,540,	946,	2,869,	1,175,	2,332,
Foreign West Indies, Hayti, &c.....	421,	2,055,	162,	1,654,	138,	1,696,
South America (Northern), Colombia, Venezuela, and Ecuador.....	858,	1,709,	654,	1,214,	816,	1,708,
" (Pacific), Peru, Bolivia, Chili, and Patagonia.....	6,219,	3,942,	5,875,	3,787,	6,127,	4,222,
" (Atlantic) Brazil, Uruguay, and Argentine Republic.....	26,769,	15,287,	20,884,	12,811,	17,847,	12,253,
Whale Fisheries; Grnld., Davis' Straits, Southn. Whale Fishery, Falkland Islands, and French Possessions in North America.....	213,	38,	202,	39,	133,	40,
<b>Total—Foreign Countries.....</b>	<b>430,536,</b>	<b>185,058,</b>	<b>422,780,</b>	<b>178,971,</b>	<b>417,515,</b>	<b>180,423,</b>
<b>II.—BRITISH POSSESSIONS.</b>						
British India, Ceylon, and Singapore.....	42,644,	39,032,	39,270,	36,802,	37,983,	39,761,
Austral. Cols.—N. So. W., Victoria & Queensld.....	14,078,	11,868,	16,002,	14,814,	20,007,	16,370,
" " So. Aus., W. Aus., Tasm., N. Zealand, & Fiji Islands.....	16,407,	10,651,	14,656,	10,531,	14,846,	10,643,
British North America.....	27,322,	11,497,	23,607,	10,720,	20,388,	8,144,
" W. Indies with Btsh. Guiana & Honduras.....	2,113,	3,009,	2,880,	2,860,	2,480,	2,677,
Cape and Natal.....	5,798,	25,341,	5,654,	24,437,	5,132,	17,154,
Brit. W. Co. of Af., Ascension and St. Helena.....	2,141,	2,894,	1,895,	2,797,	1,959,	2,930,
Mauritius.....	209,	432,	243,	399,	318,	900,
Channel Islands.....	1,647,	1,103,	1,404,	1,008,	1,362,	930,
<b>Total—British Possessions.....</b>	<b>112,359,</b>	<b>105,832,</b>	<b>105,511,</b>	<b>104,453,</b>	<b>104,475,</b>	<b>99,599,</b>
<b>General Total.....</b>	<b>£542,895,</b>	<b>290,890,</b>	<b>528,391,</b>	<b>283,424,</b>	<b>521,990,</b>	<b>280,022,</b>

\* i.e., British and Irish produce and manufactures.

**Trade of United Kingdom, for the Years 1902-1898.—Declared Value of the Total Exports of Foreign and Colonial Produce and Manufactures to each Foreign Country and British Possession.**

Merchandise Exported to the following Foreign Countries, &c.	[000's omitted.]				
	1902.	1901.	1900.	1899.	1898.
	£	£	£	£	£
<b>I.—FOREIGN COUNTRIES.</b>					
Northern Europe; viz., Russia, Sweden, Norway, Denmark, and Iceland .....	6,862,	7,675,	7,514,	6,755,	7,606,
Central Europe; viz., Germany, Holland, and Belgium .....	19,080,	19,771,	18,008,	21,351,	20,282,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries) .....	7,855,	8,427,	7,252,	8,693,	8,166,
Southern Europe; viz., Italy, Austrian Empire, Greece, and Malta .....	1,473,	1,583,	1,509,	1,589,	1,512,
Levant; viz., Turkey, Bulgaria, Roumania, Syria and Palestine, and Egypt .....	185,	565,	573,	505,	675,
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco .....	209,	167,	161,	159,	135,
Western Africa .....	92,	63,	109,	101,	92,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorla Islands .....	123,	131,	86,	165,	134,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands .....	70,	87,	93,	52,	39,
China, including Hong Kong and Japan ..	396,	315,	412,	613,	332,
United States of America .....	19,320,	19,257,	17,563,	16,856,	13,818,
Mexico and Central America .....	188,	146,	188,	195,	185,
Foreign West Indies and Hayti .....	505,	809,	749,	796,	391,
South America (Northern), Colombia, Venezuela, and Ecuador .....	27,	34,	36,	44,	48,
" (Pacific), Peru, Bolivia, Chili, and Patagonia .....	325,	328,	402,	294,	273,
" (Atlantic), Brazil, Uruguay, and Argentine Republic .....	519,	554,	687,	597,	528,
Other countries (unenumerated) .....	26,	28,	25,	48,	87,
<b>Total—Foreign Countries.....</b>	<b>57,695,</b>	<b>59,940,</b>	<b>55,967,</b>	<b>58,813,</b>	<b>54,303,</b>
<b>II.—BRITISH POSSESSIONS.</b>					
British India, Ceylon, and Singapore .....	931,	906,	993,	778,	740,
Austral. Cols.—New South Wales and Victoria, So. Aus., W. Aus., Tasm., and N. Zealand .....	2,481,	2,626,	2,384,	2,240,	2,307,
British North America .....	1,721,	1,545,	1,532,	1,423,	1,386,
" W. Indies with Btsh. Guiana & Honduras ..	338,	370,	413,	365,	389,
Cape and Natal .....	2,006,	1,785,	1,234,	839,	948,
Brit. W. Co. of Af., Ascension and St. Helena..	353,	370,	359,	304,	289,
Mauritius .....	38,	39,	26,	22,	22,
Channel Islands .....	223,	228,	226,	241,	231,
Other possessions .....	29,	33,	48,	17,	40,
<b>Total—British Possessions .....</b>	<b>8,120,</b>	<b>7,902,</b>	<b>7,215,</b>	<b>6,229,</b>	<b>6,352,</b>
<b>General Total .....</b>	<b>£ 65,815,</b>	<b>67,842,</b>	<b>63,182,</b>	<b>65,042,</b>	<b>60,655,</b>

**IMPORTS.**—(United Kingdom.)—For the Years 1908-02-01-00-1899.—Declared Real Value (*Ex-duty*), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.

[000's omitted.]

FOREIGN ARTICLES IMPORTED.		1908.	1902.	1901.	1900.	1899.
		£	£	£	£	£
<b>RAW MATLS.—Textile, &amp;c.</b>	Cotton, Raw ...	44,835,	41,149,	41,970,	40,983,	27,672,
	Wool .....	23,329,	22,715,	23,642,	23,917,	26,382,
	Silk* .....	14,485,	15,331,	14,780,	16,347,	18,448,
	Flax .....	3,676,	2,944,	3,070,	2,512,	2,928,
	Hemp and Jute .....	6,819,	9,214,	8,448,	7,480,	6,322,
	Indigo .....	263,	498,	789,	542,	986,
		93,407,	91,851,	92,699,	91,781,	82,738,
,, , <i>Various.</i>	Hides .....	2,108,	2,441,	2,770,	3,418,	2,788,
	Petroleum .....	5,295,	5,194,	5,071,	5,559,	4,575,
	Oils (other) .....	4,194,	4,444,	4,194,	3,643,	3,362,
	Metals .....	26,640,	27,304,	27,582,	29,973,	25,432,
	Tallow .....	1,988,	2,709,	2,833,	2,835,	2,380,
	Timber .....	27,118,	25,187,	24,562,	27,876,	22,582,
		67,343,	67,279,	66,512,	73,304,	61,409,
,, , <i>Agricltl.</i>	Guano .....	181,	187,	105,	177,	140,
	Seeds .....	8,592,	8,899,	7,880,	7,542,	6,277,
		8,773,	9,086,	7,985,	7,719,	6,417,
<b>TROPICAL, &amp;c., PRODUCE.</b>	Tea .....	9,667,	8,787,	8,440,	10,687,	10,620,
	Coffee and Chic... ..	3,251,	2,661,	3,371,	2,587,	3,339,
	Sugar & Molasses .....	15,761,	15,002,	19,692,	19,605,	18,449,
	Tobacco .....	4,178,	5,792,	4,746,	4,799,	5,511,
	Rice .....	2,051,	2,014,	2,478,	2,408,	2,505,
	Fruits .....	12,518,	11,707,	9,506,	10,791,	9,252,
	Wines .....	4,700,	4,942,	4,931,	5,193,	5,630,
	Spirits .....	1,726,	2,040,	2,271,	2,041,	1,873,
		53,852,	52,945,	56,435,	58,111,	57,179,
<b>FOOD</b> .....	{ Grain, Flour, } .....	68,455,	64,760,	62,732,	58,943,†	58,088,†
	{ Starch, &c. } .....	101,368,	98,255,	86,113,	80,857,	70,834,
	Provisions .....	169,823,	163,015,	148,845,	139,800,	128,922,
<b>Remainder of Enumerated Articles</b> ....		109,616,	104,895,	111,155,	110,919,	93,577,
<b>TOTAL ENUMERATED IMPORTS</b> ....		502,814,	489,071,	483,631,	481,634,	430,242,
<b>Add for UNENUMERATED IMPORTS</b> .....		40,092,	39,320,	38,359,	41,441,	54,794,
<b>TOTAL IMPORTS</b> .....		542,906,	528,391,	521,990,	523,075,	485,036,

\* "Silk," inclusive of manufactured silk. ed by Google

† These figures do not include starch, &c.

**EXPORTS.—(United Kingdom).—For the Years 1903-02-01-1900-1899.—Declared Real Value, at Port of Shipment, of Articles of BRITISH and IRISH Produce and Manufactures Exported from the United Kingdom.**

[000's omitted.]

BRITISH PRODUCE, &c., EXPORTED.		1903.	1902.	1901.	1900.	1899.
		£	£	£	£	£
<b>MANURES.—Textile.</b>	<b>Cotton Manufactures..</b>	66,220,	65,054,	65,709,	62,009,	59,489,
	"    Yarn .....	7,407,	7,404,	7,977,	7,741,	8,069,
	<b>Woollen Manufactures</b>	15,864,	15,261,	14,237,	15,682,	14,789,
	"    Yarn .....	5,953,	5,197,	5,239,	6,123,	6,722,
	<b>Silk Manufactures.....</b>	1,437,	1,393,	1,429,	1,638,	1,509,
	"    Yarn ..	257,	238,	294,	426,	471,
	<b>Linen Manufactures ....</b>	5,540,	5,430,	5,021,	5,225,	5,073,
	"    Yarn .....	840,	842,	825,	934,	909,
		103,518,	100,819,	100,731,	99,778,	97,021,
		7,561,	7,517,	5,571,	5,287,	4,636,
,,	<b>Sewed. Apparel .....</b>	1,902,	1,774,	1,460,	1,534,	1,537,
	<b>Haberdy. and Milnry.</b>					
		9,463,	9,291,	7,031,	6,821,	6,173,
<b>METALS, &amp;c. ....</b>	<b>Hardware and Cutlery</b>	2,280,	2,177,	2,077,	2,140,	2,140,
	<b>Machinery .....</b>	20,066,	18,755,	17,812,	19,620,	19,653,
	<b>Iron and Steel .....</b>	30,453,	28,877,	25,282,	31,993,	28,101,
	<b>Copper and Brass.....</b>	4,180,	3,547,	4,083,	3,556,	4,310,
	<b>Lead and Tin .....</b>	1,282,	1,193,	1,265,	1,452,	1,223,
	<b>Coals and Culm .....</b>	27,263,	27,581,	30,335,	33,620,	23,093,
	<b>Ships (New) .....</b>	4,286,	5,872,	9,149,	8,588,	9,197,
		89,760,	88,002,	90,003,	105,969,	87,717,
<b>Ceramic Manufcts.</b>						
	<b>Earthenware and Glass</b>	3,279,	2,998,	3,050,	3,072,	2,958,
<b>Indigenous Mnfcs. and Products.</b>	<b>Beer and Ale.....</b>	1,747,	1,786,	1,783,	1,761,	1,664,
	<b>Butter and Cheese ....</b>	100,	116,	95,	93,	89,
	<b>Candles .....</b>	529,	434,	433,	398,	412,
	<b>Salt.....</b>	472,	507,	509,	457,	447,
	<b>Spirits .....</b>	2,643,	2,808,	2,632,	2,363,	2,095,
		5,491,	5,651,	5,452,	5,072,	4,707,
<b>Various Manufcts.</b>	<b>Books, Printed .....</b>	1,752,	1,634,	1,553,	1,469,	1,444,
	<b>Chemicals .....</b>	6,765,	6,537,	6,052,	6,173,	5,790,
	<b>Furniture .....</b>	940,	906,	634,	636,	575,
	<b>Leather Manufactures</b>	4,322,	3,828,	3,507,	3,398,	3,339,
	<b>Plate and Watches ....</b>	578,	530,	501,	459,	421,
	<b>Soap .....</b>	1,144,	1,126,	999,	939,	942,
	<b>Stationery .....</b>	1,416,	1,286,	1,227,	1,070,	1,016,
		16,916,	15,847,	14,473,	14,144,	13,527,
<b>Remainder of Enumerated Articles .....</b>		48,095,	47,095,	39,736,	38,427,	34,680,
<b>Unenumerated Articles.....</b>		14,368,	13,721,	19,546,	17,909,	17,709,
<b>TOTAL EXPORTS.....</b>		290,890,	283,424,	280,022,	291,192,	264,492,

**SHIPPING.—(United Kingdom.)—Account of Tonnage of Vessels Entered and Cleared with Cargoes, from and to Various Countries, during the Years ended Dec., 1903-02-01.**

Countries from whence Entered and to which Cleared.	Total British and Foreign.					
	1903.		1902.		1901.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
<b>FOREIGN COUNTRIES.</b>	<b>Tons.</b>	<b>Tons.</b>	<b>Tons.</b>	<b>Tons.</b>	<b>Tons.</b>	<b>Tons.</b>
Russia { Northern ports ....	2,143,537	1,855,057	1,908,686	1,667,895	1,924,064	1,676,373
{ Southern „ ....	1,216,532	219,768	865,170	181,140	547,741	270,955
Sweden .....	1,829,046	1,969,162	1,786,686	1,886,498	1,737,249	1,853,688
Norway .....	1,477,088	1,129,854	1,374,105	1,150,915	1,406,555	1,126,156
Denmark .....	455,161	1,551,023	428,127	1,493,945	410,106	1,463,092
Germany .....	2,711,518	4,669,235	2,469,435	4,406,854	2,397,482	4,454,772
Holland .....	2,641,474	2,513,743	2,501,799	2,278,712	2,518,208	2,467,252
Belgium .....	2,357,609	2,278,977	2,239,198	2,226,050	2,186,905	2,154,615
France .....	2,638,000	4,861,005	2,740,005	5,057,822	2,648,571	5,162,574
Spain .....	3,223,723	1,726,988	3,426,912	1,723,720	3,158,303	1,688,580
Portugal .....	268,422	609,004	257,555	582,939	235,466	534,750
Italy .....	309,448	3,456,689	316,359	3,234,627	267,022	3,089,467
Austria-Hungary .....	163,622	331,741	105,562	294,725	119,833	212,451
Greece .....	216,459	243,188	211,496	234,388	180,473	251,917
Turkey .....	297,935	352,932	355,280	395,065	351,204	301,878
Roumania .....	406,955	116,256	672,142	130,415	374,216	114,820
Egypt .....	390,022	1,225,617	428,594	1,142,984	415,452	1,134,890
Algeria .....	195,602	364,452	207,085	246,252	205,023	240,702
Portuguese Possessions in Eastern Africa .....	33,321	261,732	10,139	210,627	18,245	173,627
United States of America ...	7,382,838	6,138,589	7,164,163	5,722,134	7,566,437	5,275,781
Mexico, Foreign W. Indies, and Central America ...	157,943	435,522	139,825	337,106	101,500	244,422
Republic of Colombia .....	138,752	209,911	147,111	207,409	127,475	222,730
Brazil .....	212,028	756,993	237,456	799,026	165,563	683,116
Peru .....	82,170	66,463	78,898	63,887	55,912	73,632
Chile .....	181,986	318,222	154,064	361,947	187,539	374,661
Uruguay .....	6,564	312,261	3,689	361,940	5,665	205,563
Argentine Republic .....	1,418,492	1,092,008	835,367	935,257	861,202	956,135
China .....	25,593	125,450	47,649	91,174	32,552	103,997
Java .....	42,127	163,599	19,097	182,993	28,312	193,735
Japan .....	319,136	492,975	329,598	475,437	298,255	441,925
Other countries .....	460,965	536,972	425,783	396,481	394,540	479,890
<b>Total, Foreign Countries.</b>	<b>33,409,068</b>	<b>40,385,388</b>	<b>31,937,038</b>	<b>38,479,271</b>	<b>30,927,139</b>	<b>37,630,225</b>
<b>BRITISH POSSESSIONS.</b>						
North American Colonies ...	2,293,742	1,660,629	2,009,427	1,211,135	1,522,499	1,090,243
British India .....	1,654,985	1,264,496	1,441,778	1,178,597	1,157,584	1,104,464
Mauritius, Ceylon, Straits Settlements, & Hong Kong	33,113	334,907	30,480	288,282	39,553	304,822
Australia and New Zealand	885,181	1,079,015	1,067,032	1,031,513	1,179,597	1,066,214
West Indies .....	158,381	180,152	135,544	197,244	112,713	134,457
Channel Islands .....	393,456	312,044	387,003	323,291	378,772	308,420
Gibraltar and Malta .....	65,651	363,190	22,520	424,985	11,017	380,678
Cape of G. Hope and Natal	778,431	1,399,520	672,221	1,310,557	484,496	936,128
Other possessions .....	226,006	420,575	232,297	417,949	224,465	362,055
<b>Total, British Possessions</b>	<b>6,493,949</b>	<b>7,014,578</b>	<b>5,998,068</b>	<b>6,383,553</b>	<b>5,410,696</b>	<b>5,687,480</b>
<b>TOTAL FOREIGN COUNTRIES AND BRITISH POSSESSIONS.</b>						
Twelve Months { 1903.....	39,903,017	47,399,966	—	—	—	—
{ ended '02 .....	—	—	37,004,312	44,802,058	—	—
{ December, '01.....	—	—	—	—	36,337,835	43,317,705



**GOLD AND SILVER BULLION AND SPECIE. — (United Kingdom.)**  
*—Declared Real Value of, IMPORTED AND EXPORTED, for the Years*  
**1903-1902-1901.**

[000's omitted.]

Countries.	1903.		1902.		1901.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
<b>Imported from—</b>	£	£	£	£	£	£
Australasia .....	5,818,	322,	5,462,	281,	5,566,	193,
S. America, Brazil, Mexico, W. Indies }	1,430,	204,	1,526,	410,	1,521,	537,
United States .....	30,	7,597,	51,	8,063,	264,	9,719,
	7,278,	8,123,	7,039,	8,754,	7,351,	10,449,
France .....	273,	471,	342,	439,	1,175,	419,
Germany, Holland, Belg., and Sweden }	1,730,	375,	1,507,	368,	945,	404,
Portugal, Spain, and Gibraltar ....	271,	52,	221,	36,	337,	30,
Malta and Egypt .....	290,	16,	869,	27,	1,166,	62,
China, with Hong Kong and Japan }	64,	77,	115,	45,	283,	1,
West Coast of Africa	276,	193,	94,	85,	34,	98,
British Possessions in South Africa }	14,020,	70,	7,847,	1,	1,962,	6,
British East Indies ...	4,334,	906,	3,213,	—	6,946,	1,
All other Countries ...	121,	27,	282,	9,	517,	32,
<b>Totals Imported ...</b>	<b>28,657,</b>	<b>10,310,</b>	<b>21,629,</b>	<b>9,764,</b>	<b>20,716,</b>	<b>11,502,</b>
<b>Exported to—</b>						
France .....	2,636,	1,253,	2,106,	1,076,	1,698,	1,112,
Germany, Holland, Belg., and Sweden }	7,128,	465,	806,	372,	3,819,	271,
Russia .....	—	131,	—	252,	—	62,
Portugal, Spain, and Gibraltar ....	6,	86,	—	40,	12,	41,
Malta and Egypt .....	4,736,	56,	1,768,	77,	269,	59,
	14,506,	1,591,	4,680,	1,817,	5,798,	1,545,
B. India, China, Hong Kong, and Japan .....	3,422,	8,052,	3,603,	7,612,	2,548,	9,039,
United States .....	3,842,	42,	386,	7,	52,	72,
South Africa .....	182,	53,	1,283,	167,	300,	185,
S. America, Brazil, Mexico, W. Indies }	3,543,	90,	3,290,	85,	2,115,	127,
All other Countries ...	2,272,	1,239,	2,167,	1,028,	3,152,	1,082,
<b>Totals Exported ...</b>	<b>27,767,</b>	<b>11,467,</b>	<b>15,409,</b>	<b>10,716,</b>	<b>13,965,</b>	<b>12,050,</b>
<b>Excess of imports ...</b>	<b>890,</b>	<b>—</b>	<b>6,220,</b>	<b>—</b>	<b>6,751,</b>	<b>—</b>
„ exports ...	—	1,157,	—	952,	—	548,

**BRITISH CORN.—*Gazette Average Prices (ENGLAND AND WALES),***  
*Weekly for 1903.*

Weeks ended on Saturday.	Weekly Average. (Per Imperial Quarter.)			Weeks ended on Saturday.	Weekly Average. (Per Imperial Quarter.)		
	Wheat.	Barley.	Oats.		Wheat.	Barley.	Oats.
<b>1903.</b>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<b>1903.</b>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Jan. 3 .....	25 -	23 11	16 10	July 4 .....	27 9	20 7	18 6
„ 10 .....	24 11	24 1	17 -	„ 11 .....	28 1	19 11	18 3
„ 17 .....	24 11	24 1	16 10	„ 18 .....	28 3	20 5	18 7
„ 24 .....	25 -	24 1	16 11	„ 25 .....	28 7	20 10	18 5
„ 31 .....	25 4	24 3	17 -	Aug. 1 .....	28 11	21 -	18 6
Feb. 7 .....	25 6	23 9	16 11	„ 8 .....	29 3	20 1	18 8
„ 14 .....	25 6	23 7	17 1	„ 15 .....	29 11	21 3	18 10
„ 21 .....	25 4	23 4	17 1	„ 22 .....	29 9	20 4	18 6
„ 28 .....	25 3	23 2	17 1	„ 29 .....	30 -	22 3	18 7
March 7 .....	25 3	23 1	17 1	Sept. 5 .....	30 3	22 5	18 5
„ 14 .....	25 1	22 10	17 -	„ 12 .....	28 6	22 4	17 -
„ 21 .....	25 1	22 9	16 10	„ 19 .....	27 5	24 2	16 4
„ 28 .....	25 2	22 4	17 -	„ 26 .....	27 -	24 -	16 2
April 4 .....	25 3	22 6	17 -	Oct. 3 .....	26 3	23 9	15 9
„ 11 .....	25 4	21 10	17 2	„ 10 .....	25 10	23 8	15 6
„ 18 .....	25 6	21 6	17 3	„ 17 .....	25 8	23 9	15 5
„ 25 .....	26 1	21 9	17 9	„ 24 .....	25 10	23 7	15 8
May 2 .....	26 10	22 1	18 -	„ 31 .....	26 -	24 2	15 8
„ 9 .....	27 6	21 10	18 2	Nov. 7 .....	26 4	24 3	15 9
„ 16 .....	27 9	22 5	18 4	„ 14 .....	26 6	24 6	15 9
„ 23 .....	27 10	23 7	18 5	„ 21 .....	26 9	24 3	15 10
„ 30 .....	27 8	23 7	18 5	„ 28 .....	26 6	23 11	15 11
June 6 .....	27 6	23 10	18 4	Dec. 5 .....	26 8	23 9	15 9
„ 13 .....	27 8	21 5	18 7	„ 12 .....	26 7	23 2	15 9
„ 20 .....	27 6	20 7	18 3	„ 19 .....	26 9	23 -	15 7
„ 27 .....	27 6	22 0	18 6	„ 26 .....	26 5	22 5	15 6

BRITISH CORN.—*Gazette Average Prices (ENGLAND AND WALES),  
Summary of, for 1903, with those for 1902 added for comparison.*

Average for	Per Imperial Quarter, 1903.						Per Imperial Quarter, 1902.					
	Wheat.		Barley.		Oats.		Wheat.		Barley.		Oats.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
January .....	25	—	24	1	16	11	27	7	26	8	20	—
February .....	25	4	23	5	17	—	27	1	26	11	20	3
March .....	25	1	22	9	16	11	27	1	26	8	20	5
<i>First quarter ended Lady Day .....</i>	25	2	23	5	16	11	27	3	26	8	20	3
April .....	25	6	21	10	17	3	27	9	26	7	21	—
May .....	27	6	22	8	18	3	30	11	25	11	22	5
June .....	27	6	21	11	18	5	30	9	23	10	22	10
<i>Second quarter ended Midsummer .....</i>	26	11	22	2	18	—	29	10	25	6	22	1
July .....	28	2	20	5	18	5	30	11	24	8	22	8
August .....	29	6	20	11	18	7	31	6	24	8	22	2
September .....	28	3	23	2	16	11	27	9	26	1	18	10
<i>Third quarter ended Michaelmas .....</i>	28	8	21	6	18	—	30	2	25	1	21	3
October .....	25	11	23	9	15	7	25	3	26	1	17	1
November .....	26	6	24	2	15	9	25	—	25	10	17	2
December .....	26	7	23	1	15	7	24	11	24	2	16	10
<i>Fourth quarter ended Christmas .....</i>	26	3	23	8	15	8	25	—	25	5	17	—
THE YEAR .....	26	9	22	8	17	2	28	1	25	8	20	2

## REVENUE OF THE UNITED KINGDOM.

## CALENDAR YEARS.

Net Produce in QUARTERS and YEARS ended 31st DEC., 1903-1902-01-1900.

[000's omitted.]

QUARTERS, ended 31st Dec.	1903.	1902.	1903.		Corresponding Quarters.	
			Less.	More.	1901.	1900.
	£	£	£	£	£	£
*Customs.....	8,717,	9,700,	983,	—	9,275,	7,269,
*Excise .....	8,870,	9,340,	470,	—	9,580,	9,540,
*Stamps and estate, &c., duties.....	5,260,	5,480,	220,	—	6,230,	4,860,
Taxes (Land Tax and House Duty)}	40,	50,	10,	—	40,	60,
Post Office .....	4,100,	3,940,	—	160,	3,830,	3,670,
Telegraph Service ...	920,	935,	15,	—	895,	875,
	27,997,	29,445,	1,698,	160,	29,850,	26,274,
Property and In- come Tax .....	2,060,	2,930,	870,	—	2,660,	2,190,
	29,967,	32,375,	2,568,	160,	32,510,	28,464,
Crown Lands .....	180,	180,	—	—	190,	190,
Interest on Advances	3,	2,	—	1,	10,	3,
Miscellaneous.....	344,	530,	186,	—	362,	818,
<b>Totals .....</b>	<b>30,494,</b>	<b>33,387,</b>	<b>2,754,</b>	<b>161,</b>	<b>33,072,</b>	<b>29,475,</b>
			NET DEC. £2,593,			
YEARS, ended 31st Dec.	1903.	1902.	1903.		Corresponding Years.	
			Less.	More.	1901.	1900.
	£	£	£	£	£	£
*Customs .....	33,998,	35,851,	1,853,	—	30,192,	24,710,
*Excise .....	31,290,	32,160,	870,	—	32,990,	33,070,
*Stamps and estate, &c., duties .....	21,100,	22,200,	1,100,	—	21,720,	22,275,
Taxes (Land Tax and House Duty)}	2,510,	2,550,	40,	—	2,460,	2,460,
Post Office .....	15,070,	14,640,	—	430,	14,140,	13,650,
Telegraph Service ...	3,670,	3,610,	—	60,	3,470,	3,455,
	107,638,	111,011,	3,863,	490,	104,972,	99,620,
Property and In- come Tax .....	37,150,	35,930,	—	1,170,	30,160,	20,010,
	144,788,	146,991,	3,863,	1,660,	135,132,	119,630,
Crown Lands .....	455,	450,	—	5,	500,	450,
Interest on Advances	960,	949,	—	11,	836,	828,
Miscellaneous.....	1,650,	1,893,	243,	—	1,912,	2,522,
<b>Totals .....</b>	<b>147,853,</b>	<b>150,283,</b>	<b>4,106,</b>	<b>1,676,</b>	<b>138,380,</b>	<b>123,428,</b>
			NET DEC. £3,420,			

\* Exclusive of transfers to local taxation account.

## REVENUE OF THE UNITED KINGDOM.

## FINANCIAL YEARS.

*Net Produce in Quarters in 1903, and in Financial Years ended  
31st March, 1902-03, 1901-02, 1900-01, 1899-1900.*

[000's omitted.]

QUARTERS, ended	31st March, 1903.	30th June, 1903.	30th September, 1903.	31st December, 1903.	31st March, 1904.
	£	£	£	£	£
*Customs .....	8,434,	8,721,	8,126,	8,717,	—
*Excise .....	7,340,	7,180,	7,900,	8,870,	—
*Stamps and estate, &c., duties .....	5,580,	5,300,	4,960,	5,260,	—
Taxes (Land Tax and House Duty) .....	1,910,	520,	40,	40,	—
Post Office .....	4,670,	2,797,	3,510,	4,100,	—
Telegraph Service .....	810,	900,	1,040,	920,	—
Property and In- come Tax .....	28,744, 27,150,	25,411, 6,530,	25,576, 1,410,	27,907, 2,060,	— —
Crown Lands .....	55,894, 85,	31,941, 110,	26,986, 80,	29,967, 180,	— —
Interest on Advances .....	377,	8,	572,	3,	—
Miscellaneous .....	439,	474,	393,	344,	—
<i>Totals</i> .....	56,795,	32,533,	28,031,	30,494,	—

YEARS, ended 31st March,	1902-03.	1901-02.	1902-03.		Corresponding Years.	
			Less.	More.	1900-01.	1899-1900.
	£	£	£	£	£	£
*Customs .....	34,433,	30,993,	—	3,440,	26,262,	23,800,
*Excise .....	32,100,	31,600,	—	500,	33,100,	32,100,
*Stamps and estate, &c., duties .....	22,050,	22,000,	50,	—	20,805,	22,520,
Taxes (Land Tax and House Duty) .....	2,550,	2,500,	—	50,	2,475,	2,460,
Post Office .....	14,750,	14,300,	—	450,	13,800,	13,300,
Telegraph Service .....	3,630,	3,490,	—	140,	3,450,	3,350,
Property and In- come Tax .....	109,513, 38,800,	104,883, 34,800,	50, —	4,680, 4,000,	99,892, 26,920,	97,530, 18,750,
Crown Lands .....	148,313, 455,	139,683, 455,	50, —	8,680, —	126,812, 500,	116,280, 450,
Interest on Advances .....	958,	870,	—	88,	830,	834,
Miscellaneous .....	1,826,	1,991,	65,	—	2,243,	2,276,
<i>Totals</i> .....	151,552,	142,999,	215,	8,768,	130,385,	119,840,
			NET INCR. £8,553.			

\* Exclusive of transfers to local taxation account.

## BANK OF ENGLAND.

Pursuant to the Act 7th and 8th Victoria, cap. 32 (1844)

[0,000's omitted.]

ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
1	2	3	4	5	6	7
Liabilities.	DATES.	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
		Government Debt.	Other Securities.	Gold Coin and Bullion.		
Notes Issued.	(Wednesdays.)					
£		£	£	£	£	Per cent.
Mins.	1903.	Mins.	Mins.	Mins.	Mins.	
46,97	Jan. 7 .....	11,02	7,16	28,80	29,19	4
48,41	" 14 .....	11,02	7,16	30,23	28,79	
49,67	" 21 .....	11,02	7,16	31,49	28,35	
50,47	" 28 .....	11,02	7,16	32,80	28,43	
50,72	Feb. 4 .....	11,02	7,16	32,55	28,58	
51,20	" 11 .....	11,02	7,16	33,02	28,13	
51,59	" 18 .....	11,02	7,16	33,42	27,93	
52,19	" 25 .....	11,02	7,16	34,01	28,11	
51,65	Mar. 4 .....	11,02	7,16	33,47	28,56	
51,80	" 11 .....	11,02	7,16	33,62	28,23	
52,21	" 18 .....	11,02	7,16	35,08	28,13	
52,78	" 25 .....	11,02	7,16	35,55	28,55	
52,29	April 1 .....	11,02	7,16	34,11	29,36	
50,41	" 8 .....	11,02	7,16	32,34	29,69	
48,94	" 15 .....	11,02	7,16	31,76	29,06	
51,05	" 22 .....	11,02	7,16	32,87	28,62	
51,37	" 29 .....	11,02	7,16	33,20	29,07	
51,38	May 6 .....	11,02	7,16	33,20	29,06	
51,42	" 13 .....	11,02	7,16	33,35	28,77	
51,58	" 20 .....	11,02	7,16	33,41	28,58	3 1/2
51,86	" 27 .....	11,02	7,16	33,69	29,18	
51,41	June 3 .....	11,02	7,16	33,33	29,30	
52,46	" 10 .....	11,02	7,16	34,29	28,93	
52,40	" 17 .....	11,02	7,16	35,22	28,77	3
53,75	" 24 .....	11,02	7,16	35,57	29,03	
53,33	July 1 .....	11,02	7,16	35,16	30,21	
52,75	" 8 .....	11,02	7,16	34,58	29,98	
52,65	" 15 .....	11,02	7,16	34,47	29,62	
52,59	" 22 .....	11,02	7,16	34,42	29,47	
52,12	" 29 .....	11,02	7,16	33,94	29,83	
51,11	Aug. 5 .....	11,02	7,16	32,94	30,09	
51,35	" 12 .....	11,02	7,16	33,17	29,69	
51,83	" 19 .....	11,02	7,16	33,66	29,34	
52,41	" 26 .....	11,02	7,43	33,96	29,36	
51,83	Sept. 2 .....	11,02	7,43	33,58	29,51	4
50,67	" 9 .....	11,02	7,43	32,22	29,10	
50,65	" 16 .....	11,02	7,43	32,20	28,64	
50,80	" 23 .....	11,02	7,43	32,35	28,40	
50,30	" 30 .....	11,02	7,43	31,85	29,44	
49,51	Oct. 7 .....	11,02	7,43	31,06	29,27	
48,72	" 14 .....	11,02	7,43	30,37	28,06	
48,95	" 21 .....	11,02	7,43	30,50	28,54	
49,73	" 28 .....	11,02	7,43	31,28	28,40	
48,89	Nov. 4 .....	11,02	7,43	30,44	28,76	
48,60	" 11 .....	11,02	7,43	30,15	28,55	
48,42	" 18 .....	11,02	7,43	29,87	28,24	
48,35	" 25 .....	11,02	7,43	29,80	28,20	
47,67	Dec. 2 .....	11,02	7,43	29,22	28,64	
47,27	" 9 .....	11,02	7,43	28,63	28,36	
46,93	" 16 .....	11,02	7,43	28,48	28,41	
44,84	" 23 .....	11,02	7,43	26,39	29,08	
45,46	" 30 .....	11,02	7,43	27,01	28,79	

## —WEEKLY RETURN.

for Wednesday in each Week, during the Year 1903.

[0,000's omitted.]

8	9	10	11	12	13	14	15	16	17	18
BANKING DEPARTMENT.										
Liabilities.					DATES. (Wednesdays.)	Assets.				
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		Totals of Liabili- ties and Assets.
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£	£	£	£	£	1903.	£	£	£	£	£
Mins.	Mins.	Mins.	Mins.	Mins.		Mins.	Mins.	Mins.	Mins.	Mins.
14,55	3,50	10,13	41,07	,10	Jan. 7 .....	20,04	29,62	17,79	1,91	69,36
14,55	3,53	8,00	40,77	,19	" 14 .....	17,64	27,79	19,63	2,00	67,04
14,55	3,56	10,40	40,09	,18	" 21 .....	17,64	27,80	21,31	2,02	68,77
14,55	3,56	8,52	42,25	,15	" 28 .....	16,64	29,27	22,04	2,08	69,03
14,55	3,58	9,41	40,30	,12	Feb. 4 .....	15,06	28,64	22,14	2,12	67,96
14,55	3,60	11,24	39,68	,15	" 11 .....	15,06	28,68	23,07	2,10	69,22
14,55	3,62	13,28	40,04	,14	" 18 .....	15,06	30,88	23,66	2,03	71,64
14,55	3,62	12,37	42,63	,13	" 25 .....	14,83	32,36	24,08	2,03	73,31
14,55	3,76	12,65	42,70	,15	Mar. 4 .....	14,65	34,00	23,08	2,09	73,82
14,55	3,77	13,88	40,61	,17	" 11 .....	14,67	32,52	23,87	2,12	72,88
14,55	3,79	14,68	40,98	,18	" 18 .....	14,67	32,27	26,08	2,10	74,12
14,55	3,82	16,41	41,16	,18	" 25 .....	14,67	34,10	26,18	2,13	76,08
14,55	3,82	12,91	44,08	,12	April 1 .....	14,61	36,05	22,98	2,09	75,57
14,55	3,14	7,85	39,48	,16	" 8 .....	14,61	27,80	20,73	2,11	65,15
14,55	3,14	8,01	39,37	,9	" 15 .....	14,52	27,81	20,87	1,96	65,17
14,55	3,15	8,57	38,86	,10	" 22 .....	14,52	26,15	22,43	2,06	65,17
14,55	3,16	8,25	41,65	,9	" 29 .....	14,52	28,74	22,20	2,15	67,72
14,55	3,15	7,69	39,06	,13	May 6 .....	14,52	25,61	22,31	2,16	64,60
14,55	3,18	7,13	59,10	,11	" 13 .....	14,80	24,49	22,65	2,18	84,07
14,55	3,20	8,53	40,31	,18	" 20 .....	14,80	26,73	23,00	2,18	66,72
14,55	3,18	8,59	40,25	,11	" 27 .....	14,80	27,05	22,68	2,16	66,69
14,55	3,16	7,43	41,28	,12	June 3 .....	14,60	27,51	22,10	2,13	66,53
14,55	3,16	7,33	40,89	,12	" 10 .....	14,97	25,42	23,53	2,12	66,04
14,55	3,17	11,06	39,26	,15	" 17 .....	15,07	26,29	24,63	2,20	68,19
14,55	3,18	11,47	40,40	,14	" 24 .....	15,07	27,81	24,72	2,18	69,74
14,55	3,22	11,09	48,88	,12	July 1 .....	15,07	37,51	23,12	2,16	77,87
14,55	3,42	7,67	40,74	,12	" 8 .....	15,28	26,22	22,77	2,14	66,41
14,55	3,44	6,91	41,45	,12	" 15 .....	15,34	25,99	23,08	2,12	66,48
14,55	3,45	7,24	41,34	,18	" 22 .....	15,34	26,02	23,13	2,14	66,62
14,55	3,45	6,94	42,82	,9	" 29 .....	15,34	27,61	22,29	2,12	67,36
14,55	3,48	6,29	39,94	,9	Aug. 5 .....	15,34	25,90	21,02	2,09	64,35
14,55	3,48	6,56	41,18	,11	" 12 .....	15,34	25,59	21,65	2,10	65,69
14,55	3,53	8,66	43,31	,12	" 19 .....	20,54	25,06	22,49	2,08	70,18
14,55	3,51	8,78	43,39	,14	" 26 .....	20,27	24,81	23,05	2,15	70,27
14,55	3,74	7,39	41,87	,11	Sept. 2 .....	18,26	24,97	22,32	2,12	67,67
14,55	3,73	7,23	38,77	,12	" 9 .....	17,08	23,71	21,57	2,07	64,42
14,55	3,76	7,12	37,18	,12	" 16 .....	16,95	21,66	22,01	2,11	62,73
14,55	3,77	7,27	38,09	,16	" 23 .....	16,69	22,65	22,41	2,09	63,84
14,55	3,78	8,22	43,50	,16	" 30 .....	16,91	30,48	20,86	1,96	70,21
14,55	3,13	7,40	44,40	,15	Oct. 7 .....	20,09	27,26	20,24	2,05	69,64
14,55	3,13	6,39	43,14	,12	" 14 .....	19,98	25,50	19,76	2,10	67,34
14,55	3,15	7,13	42,91	,14	" 21 .....	20,00	25,36	20,41	2,12	67,89
14,55	3,16	7,74	39,88	,14	" 28 .....	17,40	24,11	21,33	2,14	64,98
14,55	3,16	6,39	40,48	,16	Nov. 4 .....	17,20	25,29	20,18	2,11	64,73
14,55	3,17	6,23	38,92	,10	" 11 .....	16,49	24,42	20,05	2,01	62,97
14,55	3,20	6,92	37,54	,11	" 18 .....	16,14	23,94	20,18	2,07	62,33
14,55	3,20	6,88	37,70	,18	" 25 .....	15,76	24,57	20,05	2,09	62,47
14,55	3,15	7,84	40,93	,12	Dec. 2 .....	18,26	26,53	19,04	2,06	65,88
14,55	3,15	7,60	38,86	,11	" 9 .....	19,01	21,27	18,91	2,08	64,27
14,55	3,16	7,56	39,13	,14	" 16 .....	19,23	24,84	18,52	1,95	64,55
14,55	3,17	7,97	39,76	,18	" 23 .....	19,23	28,67	15,76	1,91	65,57
14,55	3,21	7,95	48,43	,10	" 30 .....	19,23	36,42	16,67	1,90	74,23

FOREIGN EXCHANGES.—*Quotations as under, LONDON on Paris, Hamburg, Calcutta;—and New York and Hong Kong, on LONDON, for 1903.*

1 DATES. (Tuesdays or nearest Dates.)	2 London on Paris. 3 m. d.	3 London on Hamburg. 3 m. d.	4 Calcutta.		6 New York on London. 60 d. s.†	7 Hong Kong on London. 4 m. d.†	8 Price per Ounce.	
			London on Calcutta. Demand.	Indian Council Bills. Minimum Price per Rupee.*			Gold Bars (Fine).	Standard Silver in Bars.
1903.			s. d.	s. d.	\$	s. d.	s. d.	d.
Jan. 6 ....	25·33½	20·61	1 4	1 4½	4·83½	1 7½	77 10½	24½
„ 20 ....	25·35	20·62	1 4½	1 4½	4·83½	1 6½	77 9½	21½
Feb. 3 ....	25·33½	20·62	1 4½	1 4½	4·84½	1 6½	77 9½	21½
„ 17 ....	25·35	20·62	1 4½	1 4½	4·84½	1 7½	77 9½	22½
Mar. 3 ....	25·35	20·65	1 4½	1 4½	4·83½	1 7½	77 9½	22½
„ 17 ....	25·36½	20·67	1 4½	1 4	4·84	1 7½	77 9½	22½
„ 31 ....	25·37½	20·67	1 3½	1 3½	4·83½	1 7½	77 9½	22½
Apl. 14 ....	25·37½	20·66	1 3½	1 3½	4·83½	1 7½	77 9½	22½
„ 28 ....	25·36½	20·67	1 3½	1 3½	4·84½	1 8½	77 9½	25½
May 12 ....	25·36½	20·66	1 3½	Full	4·85	1 8½	77 9½	24½
„ 26 ....	25·36½	20·65	1 3½	1 3½	4·85½	1 8½	77 9½	24½
June 9 ....	25·35	20·63	1 3½	1 3½	4·84½	1 8½	77 9½	24½
„ 23 ....	25·33½	20·60	1 3½	1 4	4·84½	1 8½	77 9½	24½
July 7 ....	25·32½	20·56	1 3½	1 4	4·85	1 8½	77 10	24½
„ 21 ....	25·31	20·55	1 3½	1 4	4·84	1 8½	77 10½	25½
Aug. 4 ....	25·32½	20·56	1 4	1 4	4·83	1 9½	77 10½	25½
„ 18 ....	25·30	20·57	1 3½	1 4	4·83½	1 9½	77 10½	25½
Sept. 1 ....	25·32½	20·57	1 3½	1 4	4·83½	1 10½	77 10½	26½
„ 15 ....	25·37½	20·60	1 3½	1 4½	4·82½	1 10½	77 10½	26½
„ 29 ....	25·38½	20·61	1 3½	1 4½	4·82	1 10½	77 10½	27½
Oct. 13 ....	25·35	20·61	1 3½	1 4	4·82½	1 10½	77 10½	28
„ 27 ....	25·35	20·62	1 3½	1 4	4·81½	1 10½	77 10½	27½
Nov. 10 ....	25·37½	20·66	1 4	1 4½	4·79½	1 9½	77 11½	27
„ 24 ....	25·38½	20·66	1 4½	1 4½	4·79½	1 9½	77 11½	26½
Dec. 8 ....	25·38½	20·66	1 4½	1 4½	4·79½	1 8½	78 0½	25
„ 22 ....	25·36½	20·62	1 4½	1 4½	4·81½	1 8½	77 10½	25½
„ 29 ....	25·36½	20·63	1 4½	1 4½	4·81½	1 9½	77 10½	25½

\* Wednesdays following.

† Thursdays following.



**JOURNAL**  
**OF THE**  
**ROYAL**  
**STATISTICAL SOCIETY.**

*Founded 1834.*

*Incorporated by Royal Charter 1887.*

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**VOL. LXVII.—PART II.**

**30TH JUNE, 1904.**

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**LONDON:**  
**THE ROYAL STATISTICAL SOCIETY,**  
**9, ADELPHI TERRACE, STRAND, W.C.**

**1904.**

# Hobbs, Hart & Co., Ltd.

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STATISTICS *of* LONDON TRAFFIC.

By EDGAR J. HARPER.

[Read before the Royal Statistical Society, 15th March, 1904.  
MAJOR PATRICK GEORGE CRAIGIE, C.B., President, in the Chair.]

THE appointment of a Royal Commission to inquire into the means of locomotion and transport in London, and the public interest evoked by its proceedings, render the present an appropriate occasion for dealing with the statistical aspect of the question. But even that one aspect of this huge problem is too large for adequate treatment in a single paper; and the necessary *data* are in some cases deficient, and in others non-existent. Therefore the attempt made in this paper is mainly to bring together and classify the best of the available material. While indicating some of the more obvious conclusions to be drawn from the figures, the suggestion of remedies for existing difficulties forms no part of its object.

Considerations of time and space have rendered it necessary to omit altogether all minor branches of the subject, such as width of streets, goods traffic, &c., and to devote the whole of the paper to the pressing question of passenger traffic.

The area adopted as a basis for local figures is that commonly known as "Greater London." It is made up of the City of London and the Metropolitan Police area, and embraces all parishes the whole of which is within 15 or part of which is within 12 miles of Charing Cross. It covers 693 square miles of land and, in 1901, had a population of 6,581,402, or a little more than double that of 1861. Many regular travellers to town live beyond these limits, and a considerable proportion of the population within them is not concerned in daily travel; but the use of this area by the Registrar-General for census purposes renders it more convenient in this connection than the construction of a special area *ad hoc*.

The subject naturally falls under two heads, viz.:—Traffic by railway and traffic by road.

### I.—*Railway Traffic.*

There are about 600 miles of railway in Greater London, of which nearly 222 are within the administrative county of London. Further items of general information are contained in the following table:—

TABLE I.—*Railways and Stations in Greater London Compared with Area and Population.*

	Unit of Statistics.	North of the Thames.	South of the Thames.	Total.
Area .....	Square miles	438.27	259.57	692.84
Population .....	Persons	4,298,935	2,282,467	6,581,402
Length of railways .....	Miles	338.3	261.8	599.6
" per sq. mile .....	"	0.78	1.01	0.86
Passenger stations .....	Number	335	196	531
" per sq. mile .....	"	0.77	0.76	0.77
Population per mile of railway .....	"	12,707	8,735	10,976
" per station .....	"	12,838	11,645	12,394
Inward trains each week-day—				
Local .....	"	2,357	1,895	4,252
Long distance .....	"	225	220	445
Total .....	"	2,582	2,115	4,697

So far as these figures go, it would seem that South London is better equipped with railway facilities than North London, especially in proportion to population. The number of stations per square mile is almost the same on both sides of the river, but on the north side each station has to serve a population 10 per cent. greater on the average than on the south side. The length of railway per square mile in the south is nearly 30 per cent. more than in the north, while the population per mile of line is 45 per cent. less. But it would be premature to draw a definite conclusion of this character from the totals alone, and an examination of the details will modify it considerably. It is interesting to note that almost as many long distance trains arrive from the south as from the north, although the local trains are 20 per cent. less.

The next table subdivides the lines and stations between the various companies concerned, and gives the number of passengers carried by each company in 1902.

TABLE II.—*Railways Serving Greater London.*

Company.	Length of Line in Greater London.	Number of Stations in Greater London.	Total Passengers Carried in 1902 by	
			Railways Wholly or Partially Confined to Greater London.	Other Railways Serving Greater London.
<b>TRUNK LINES.</b>				
South Eastern and Chatham ....	124·7	99	—	95,129,022
Great Eastern .....	86·1	88	—	148,056,101
London, Brighton, and South Coast } .....	71·7	56	—	74,681,418
London and South Western ...	75·7	50	—	74,992,139
Great Northern .....	32·7	28	—	62,478,280
London and North Western ...	24·2	19	—	115,294,694
Great Western .....	28·7	15	—	94,485,288
Midland .....	20·3	14	—	77,402,313
London, Tilbury, and Southend	16·3	8	—	22,089,974
Great Central .....	2·2	1	—	28,896,715
Total .....	482·6	378	—	792,999,944
<b>LOCAL LINES.</b>				
Metropolitan .....	23·2	28	95,826,207	—
District .....	19·1	29	48,768,317	—
North London .....	10·6	18	50,041,353	—
Total .....	52·9	75	194,135,877	—
<b>LOCAL JOINT LINES.</b>				
Croydon and Oxted .....	7·3	4	*	—
East London .....	6·8	6	7,296,662	—
Tottenham and Forest Gate ...	6·0	5	*	—
Tooting, Merton, and } .....	5·6	5	*	—
Wimbledon .....				
North and South Western } .....	5·1	3	534,736	—
Junction .....				
West London Extension .....	4·8	3	*	—
Tottenham and Hampstead ...	4·5	9	*	—
Hammersmith and City .....	3·0	5	*	—
West London .....	2·3	2	*	—
Whitechapel and Bow .....	2·1	3	†3,343,282	—
Metropolitan and Metro- } .....	2·0	5	1,511,409	—
politan District .....				
Epsom and Leatherhead .....	1·1	—	*	—
Total .....	50·6	50	12,686,089	—
<b>TUBE LINES.</b>				
City and South London .....	6·1	13	19,755,119	—
Central London .....	5·9	13	45,305,110	—
Waterloo and City .....	1·5	2	5,228,735	—
Total .....	13·5	28	70,288,964	—
Grand Total .....	599·6	531	277,110,930	792,999,944

\* The traffic on these lines is included with that of the trunk lines working them.

† These figures are for the period from 1st June to 31st December, 1902, the line not being open before.

In order to make the number of passengers—or, strictly speaking, the number of separate journeys—complete, an estimate of the number of journeys performed by season-ticket holders has been included in the last two columns of this table. It is most unfortunate that no distinction is made in the railway returns between London suburban traffic on the one hand and provincial and through traffic on the other. There is not even any satisfactory basis for apportioning the number of passengers on the trunk lines between London and the rest of the Kingdom, though it is probably safe to state that 250,000,000 of the 793,000,000 carried by trunk lines represent local passengers in Greater London. The Great Central Railway has no London suburban traffic; and if the figures for this line are excluded, and 40 per cent. of the remaining trunk line traffic attributed to London, the figure would be 305,841,691 passengers; and this, added to the 277,110,930 passengers on local lines, would show a total for the year not far short of 600,000,000 railway journeys in Greater London, or 88 journeys per head of population.

The distribution of this enormous passenger traffic over the twenty-four hours is of course very unequal. It would be easy to occupy an evening with an investigation of its variations and their causes; but if attention be mainly directed to the inward morning traffic, for which alone I am in a position to give figures in detail, some light will incidentally be thrown on the traffic at other times. The most difficult problem which confronts the railway manager is that of carrying an enormous number of passengers to the central districts in the course of two or three hours. If he can overcome all the obstacles to a successful discharge of this function, the return journeys in the evening, being spread over a longer period, are not likely to give him much trouble. Saturday afternoon, with its addition of pleasure traffic, presents special difficulties of its own; but as to this, unfortunately, figures are not available. Bank Holidays and special excursions make demands of a totally different kind upon railway accommodation.

In the next table the 4,252 inward suburban trains run on each week day are divided into 24 sections, according to the hour of arrival.

The mere number of trains does not give an adequate idea of the volume of traffic in each hour, the trains arriving between 7 and 10 A.M. usually carrying a full complement of passengers, while this is seldom the case at any other time. For instance, the excess of inward traffic between 9 and 10 A.M. over that between 6 and 7 P.M. is far greater than the proportion between 384 and 259 trains would imply.

TABLE III.—*Number of Local Trains Arriving at London Termini in each Hour of an Ordinary Week-Day in 1903.*

Hour of Arrival.	Number of Trains.	Hour of Arrival.	Number of Trains.	Hour of Arrival.	Number of Trains.
A.M.		A.M.		P.M.	
12—1	51	9—10	384	4—5	210
1—2	3	10—11	267	5—6	248
2—3	3	11—12	218	6—7	259
3—4	7			7—8	242
4—5	13	P.M.		8—9	212
5—6	67	12—1	198	9—10	200
6—7	145	1—2	206	10—11	163
7—8	242	2—3	199	11—12	142
8—9	860	3—4	213		

Between 5 and 9 A.M. a large number of trains are run at cheap fares, and consequently a further subdivision is made in the following table of the trains running between those hours. Ordinary fares are charged by all local trains arriving after 9 A.M.

TABLE IV.—*Number of Local Trains Arriving at London Termini on an Ordinary Week-Day in 1903, between 3 and 9 A.M.*

Hour.	Twopenny Trains.	Other Workmen's Trains.	Half-Fare Trains.	Ordinary Trains.	Total.
A.M.					
3—4	—	3	—	4	7
4—5	—	6	—	7	13
5—6	17	49	—	1	67
6—7	37	106	—	2	145
7—8	32	155	33	22	242
8—9	1	41	3	315	360
Totals ....	87	360	36	351	834

Considerable importance attaches to the classification of trains adopted in this table. "Twopenny Trains" are those run for workmen only at a uniform fare of 2d. return for the whole or any part of the journey. All workmen's trains at higher fares, and all trains by which workmen's tickets are available for a portion of the journey, are included as "Other Workmen's Trains." "Half-fare Trains" are run by three lines only, the usual practice being to charge an ordinary single fare for a return ticket. "Ordinary Trains" are those by which the full fare is charged. The column headed "Other Workmen's Trains" includes :—

- (a.) Workmen's trains by which the fares are higher than 2d. return for the whole journey.
- (b.) Half-fare trains by which workmen's tickets are available for part of the journey.
- (c.) Trains which are partly "Workmen's" and partly "Half-fare."

It will be noticed that up to 7 A.M. the trains are almost entirely "Workmen's;" that from 7 to 8 A.M. "Workmen's" and "Half-fare" trains form ten-elevenths of the total; and that from 8 to 9 A.M. that proportion falls to one-seventh. As a matter of fact all cheap services come to an end a few minutes after 8 A.M.

The number of passengers carried daily by these inward trains up to 10.30 A.M., when the regular business traffic may be regarded as over, are set out under the various heads in Appendix A. These figures are derived from actual observation of the traffic during recent years. More accurate results could no doubt be obtained if the returns probably existing in the books of the railway companies could be made available for analysis; but in the absence of such an advantage the figures given furnish some indication of the extent and distribution of the traffic, though they cannot be said to represent an average, having been compiled at various times and seasons.

Several useful and interesting results may be deduced from these materials. The density of the traffic by individual trains is shown in the next table.

TABLE V.—*Average Number of Passengers per Inward Morning Train.*

Trains.	From the North.	From the South.	Total.
Twopenny .....	317	Nil	317
Other workmen's .....	273	213	240
Half-fare.....	497	Nil	497
Ordinary.....	335	304	322

Of the 87 "twopenny" trains, 31 run into the Central London (Bank) terminus, and 28 into Liverpool Street. The former carry 188 persons per train on the average, and the latter 467. But for the comparatively limited seating capacity of the Central London trains, the average number of passengers per "twopenny" train would be considerably larger. The heaviest "other workmen's" train, carrying more than 1,000 passengers, runs over the London, Tilbury and Southend line to Fenchurch Street. This table brings out clearly the great pressure upon the northern lines as compared with the southern. No "twopenny" or "half-fare" trains run south of the river, though these two classes are so largely used in the North.



Another interesting feature of this traffic is its density per hour, as shown in the next table.

TABLE VI.—*Number of Passengers by Inward Local Trains in each Hour of the Morning, and the Average per Train.*

Hour of Arrival.	At Cheap Fares.		At Ordinary Fares.		Total.		Average Passengers per Train.
	Trains.	Passengers.	Trains.	Passengers.	Trains.	Passengers.	
A.M.							
3—4	3	241	—	—	3	241	80
4—5	6	824	—	—	6	824	137
5—6	66	13,194	—	—	66	13,194	200
6—7	143	35,880	2	113	145	35,993	248
7—8	220	66,821	15	3,299	235	70,120	298
8—9	45	14,995	300	110,462	345	125,457	364
9—10	—	—	369	127,765	369	127,765	346
10—10.30	—	—	179	36,878	179	36,878	206
Totals ....	483	131,955	865	278,517	1,348	410,472	305

This shows at a glance where the “cheap” traffic ends and the “ordinary” traffic begins, and the extent to which the two classes overlap. It will be noticed that more than one-third of these trains are run at cheap fares. The comparative pressure of the traffic is indicated by the average number of passengers per train, as shown in the last column. This steadily rises to a maximum of 364 between 8 and 9 A.M., and falls slightly between 9 and 10, but rapidly afterwards.

TABLE VII.—*Extent of Overcrowding on Inward Morning Trains.*

Overcrowded Trains Arriving between	From the North.	From the South.	Total.
A.M.			
6—7.....	3	2	5
7—8.....	14	6	20
9—9.....	47	26	73
9—10.....	39	41	80
10—10.30 .....	5	4	9
Total .....	108	79	187
Total trains up to 10.30 A.M. ....	787	581	1,318
Percentage of trains overcrowded ....	14.7	13.6	14.2
Total seating accommodation of overcrowded trains .....	49,764	26,522	76,286
Total passengers carried by overcrowded trains .....	58,738	30,255	88,988
Percentage of passengers in excess of seating accommodation .....	18.0	14.1	16.7
Greatest percentage of overcrowding on a single train .....	72.1	60.4	72.1

Overcrowding in the up morning trains on suburban railways is notorious. It is, however, very unevenly distributed. The foregoing table gives the number of overcrowded trains on the day of observation, and the extent of the overcrowding. It furnishes a further indication of the greater pressure of local traffic in the North, the record being held by a train carrying on the average a little over 17 persons in each compartment intended to carry only ten.

The regular morning traffic is susceptible of improved distribution by a carefully graduated system of fares. The Great Eastern Company run workmen's trains up to about 7 A.M. at *2d.* return. On trains arriving between 7 and 7.30 A.M., the return fare is *3d.*, and between 7.30 and 8 A.M. "half-fare" is the rule. Thus a number of passengers are attracted by the "half-fare" trains out of the "rush" hour between 8 and 9 A.M., and still larger numbers are induced to travel before 7 or 7.30 in order to obtain the benefit of the cheaper workmen's fares. As a result, the overcrowding on this line is much below the average, though it serves the most densely populated areas.

An important factor in connection with overcrowding is the carrying capacity of the trains. On the trunk line systems the average capacity of the trains is much greater than on the purely local lines. Taking the trains between 8 and 9 A.M., the average carrying capacity on the Great Eastern to Liverpool Street is over 700, on the Tilbury line over 600, and on the London and South Western nearly 600, as compared with the North London line 459, the Metropolitan 411, the Metropolitan District 386, the Central London 336, the Waterloo and City 224, and the City and South London 144. It appears that the size of the trains is often governed by the length of the station platforms.

It must be borne in mind that the outward traffic in the evening—which has not been examined in detail—is practically the counterpart of that inwards in the morning. The figure of 410,472 in Table VI must, therefore, be doubled to represent the number of journeys per day taken by persons in regular daily occupations. Putting the total number of rail journeys taken in Greater London at 550,000,000 per annum, and assuming the smaller traffic on Sundays to counterbalance the heavy traffic on special occasions, the total number of journeys on an average week-day would be 1,506,850. Half of this number (753,425) represents inward traffic, and deducting the 410,472 from this leaves a miscellaneous traffic of 342,953 inward journeys per day. As the business traffic only occupies about four hours, this miscellaneous traffic is spread over the other fourteen hours of which the average railway day consists; the average number of journeys per hour being thus 24,497, while

during the four hours of business traffic the average number of journeys per hour is 102,618. The latter figure, however, includes only those passengers carried to the central area; whereas many business passengers, especially workmen, alight at intermediate stations. The business traffic is thus four or five times as dense as the miscellaneous traffic. On particular railways the difference may be greater still.

### *Fares.*

1st, 2nd and 3rd class fares are charged on all the trunk line systems for suburban traffic, except on the Midland and the London, Tilbury and Southend lines. The three tube lines have only one class.

Third-class fares, and workmen's other cheap fares, have an important effect upon the great bulk of the population, to whom the question of a high or low fare is a matter of consequence. The following table shows the average mileage rate of all 3rd class return fares to each terminus for distances within 20 miles. The average is based on the longest distance for each fare on every branch of the several railways.

TABLE VIII.—*Mileage Rates of Third Class Return Fares.*

Railway.	Average Mileage Rate of 3rd Class Return Fares to each Terminus for Distances not Exceeding 20 Miles.	Railway.	Average Mileage Rate of 3rd Class Return Fares to each Terminus for Distances not Exceeding 20 Miles.
	<i>d.</i>		<i>d.</i>
Central London .....	0·34	London, Brighton and South Coast—	
Metropolitan District—		To Victoria .....	0·73
To Mansion House .....	0·43	„ London Bridge .....	0·74
„ Whitechapel .....	0·42	South Eastern and Chat- ham—	
North London .....	0·43	To Victoria .....	0·76
Metropolitan—		Ludgate Hill .....	0·72
To Aldgate .....	0·53	„ Charing Cross .....	0·84
„ Baker Street .....	0·68	„ Cannon Street .....	0·86
London, Tilbury and } Southend .....	0·62	London and South Western City and South London—	0·78
London and North } Western .....	0·66	After 10 A.M. ....	0·83
Great Eastern—		From 8 to 10 A.M. ....	0·94
To Fenchurch Street ....	0·67	Great Western .....	0·89
„ Liverpool Street .....	0·78	Great Northern—	
Midland—		To King's Cross .....	0·92
To St. Pancras .....	0·75	„ Moorgate Street .....	0·88
„ Moorgate Street .....	0·64		

The mileage rate of fares on all the southern lines is high—higher, indeed, than any other rates, except those of the Great Northern and Great Western. Of the four railways having the lowest mileage rates, three run underground.

*Workmen's Trains Service.*

On all the lines, except the Great Central Railway, there is an inward service of workmen's trains to the various termini. With the exception of the Great Central, Great Eastern, Great Northern, Great Western, Midland and London, Tilbury and Southend Railways, there is also an outward service of workmen's trains from these termini. In some cases there is what may be described as a local service serving outlying stations in the county and in extra-London.

The following table gives the number of workmen's trains and the corresponding number of miles run daily by the various companies in December, 1902.

TABLE IX.—*Workmen's Trains on each Line.*

Railway.	Total Number of Workmen's Trains Run Daily in December, 1902.	Number of Miles Run Daily by Workmen's Trains.	Percentage of Total Mileage Run by each Company.
South Eastern and Chatham	130	1,072	17·8
London and South Western	79	809	13·4
London, Brighton and South Coast	68	594	9·9
Metropolitan	76	586	9·7
" District	69	575	9·5
Great Eastern	110	547	9·1
Central London	85	504	8·4
City and South London	68	395	6·6
Great Western	31	269	4·5
North London	40	238	3·9
London and North Western	16	173	2·9
Great Northern	12	121	2·0
London, Tilbury and Southend	12	84	1·4
Midland	5	52	0·9
Totals	801	6,019	100·0

Where a service is run jointly by two companies the trains are assigned to the company by whom they are run, as it is not easy to make a more satisfactory division. This affects the figures for four of the companies, viz., the Metropolitan, the Metropolitan District, the London, Tilbury and Southend and the Great Western. The average mileage rates at which the workmen's fares to each ter-

minus work out are shown in the following table, together with the number of passengers at such fares, according to the latest return of the Board of Trade, viz., for the year 1902 :—

**TABLE X.—*Mileage Rates of Workmen's Fares and Number of Workmen Carried.***

Railway.	Average Mileage Rates of the Workmen's Fares to each Terminus.	Total Number of Workmen Passengers Conveyed in London District in 1903.	Percentage of the Workmen Passengers Carried by each Railway in 1902.
<b>Great Eastern—</b>	<i>d.</i>		
To Liverpool Street .....	0·16	} 17,358,114	17·5
„ Fenchurch Street .....	0·25		
<b>North London—</b>			
To Broad Street .....	0·17	9,602,256	9·6
<b>Central London—</b>			
To Bank .....	0·17	5,465,818	5·5
<b>Metropolitan District—</b>			
To Mansion House .....	0·20	} 10,417,980	10·4
„ Whitechapel .....	0·22		
<b>Metropolitan—</b>			
To Aldgate .....	0·21	} 11,008,034	11·0
„ Baker Street .....	0·23		
<b>London, Tilbury and Southend—</b>			
To Fenchurch Street and District stations .....	0·22	7,651,772	7·7
<b>Midland—</b>			
To St. Pancras .....	0·24	} 657,006	0·6
„ Moorgate Street .....	0·22		
<b>London, Brighton and South Coast—</b>			
To London Bridge .....	0·24	} 7,559,050	7·6
„ Victoria .....	0·23		
<b>South Eastern and Chatham—</b>			
To Charing Cross .....	0·24	} 14,003,750	14·0
„ Cannon Street .....	0·27		
„ Ludgate Hill .....	0·23		
„ Victoria .....	0·24		
<b>Great Northern—</b>			
To King's Cross .....	0·27	} 2,096,598	} 2·1
„ Moorgate Street .....	0·26		
<b>Great Western—</b>			
To Paddington .....	0·26	405,402	0·4
<b>London and South Western—</b>			
To Waterloo .....	0·29	8,463,578	8·5
<b>London and North Western—</b>			
To Euston .....	0·31	1,324,156	1·3
<b>City and South London—</b>			
To "Angel," Islington .....	0·33	3,778,286	3·8
		99,791,800	100·0

It must be borne in mind that the workmen's fares between intermediate stations, those for outward services and for local

services not touching the termini, are excluded from the calculation on which the mileage rates in the foregoing tables are based.

Both the Great Eastern—except for a certain number of trains—and the North London Companies allow workmen to travel any distance within the radius of their workmen's trains service (which is the whole system of the latter) for a return fare of *2d.*; and they carry together 27·1 per cent. of the workmen passengers, though they have only about one-sixth of the railway mileage in Greater London.

Three of the great trunk systems—the Midland, the Great Western, and the London and North Western—on which the service is meagre and the fares comparatively high, carry between them only 2,386,564 passengers, or 2·3 per cent. of the whole.

### *Tube Railways.*

The development and progress of tube railways is a subject of especial public interest at the present time, and the traffic statistics of the three lines which are now working are given in the following table:—

TABLE XI.—*Route Mileage and Passenger Traffic of the London Tube Railways.*

Railway.	1900.	1901.	1902.	1903.
City and South London—				
Route mileage .....	4·65	6·11	6·11	6·11
Passengers carried .....	9,188,559	12,896,628	19,069,819	18,222,512
Waterloo and City—				
Route mileage .....	1·57	1·57	1·57	1·57
Passengers carried .....	3,907,137	4,324,594	4,546,535	4,521,997
Central London—				
Route mileage .....	6·43	6·43	6·43	6·43
Passengers carried .....	14,916,922	41,188,389	45,305,110	44,954,914

The City and South London Company opened two extensions in 1900, and a third in 1901, completing the line as now working from Clapham to the "Angel." The Central London line was opened on 30th July, 1900. It is noteworthy that in all three cases there was a decrease of passengers in 1903. In the City and South London this is due to the competition of the electric tramway now running along the same route; in the other two lines the decreases are small in amount. But it may well be doubted whether locomotion on the surface will not prove more attractive in the long run, in spite of the speed obtained in the "tubes."

II. *Road Traffic.*

Under this head statistics have never been regularly compiled. The Metropolitan Police authorities refrain from publishing such information as they possess, and local authorities hardly ever make observations of road traffic. Apart from the work done by the London County Council from time to time for particular purposes, almost the only available figures of this nature are those which have been compiled in past years by the City authorities, to whom I am indebted for much of the material in the tables dealing with general traffic. Much valuable comparative information is to be found in the reports of the day censuses taken by the City Corporation, and many interesting figures are taken from the annual reports of a body now defunct—the City Commissioners of Sewers.

The vehicular traffic in the Strand, Holborn and Piccadilly has recently been observed by the instructions of the London County Council, and these observations were repeated in September last in order to ascertain what difference (if any) would be shown at a time when so many of London's local travellers are supposed to be "out of town." Fine weather prevailed on all the days of observation, and the results are given in the three following tables:—

TABLE XII.—*Vehicular Traffic in the Strand (at Wellington Street).*

Class of Vehicle.	Number on Friday, 4th July, 1902, (8 A.M. to 8 P.M.).	Number on Friday, 18th September, 1903 (8 A.M. to 8 P.M.).	Increase or Decrease per Cent. of 18th September, 1903, Traffic, Compared with 4th July, 1902, Traffic.
Omnibuses .....	4,057	4,343	+ 7.0
Carriages—			
Horsed .....	406 } 448	386 } 417	- 4.9 } - 6.9
Motor .....	42 }	31 }	- 21.4 }
Cabs....	3,147	2,853	- 9.3
Carts, vans, and other trade vehicles—			
Horsed .....	3,262 } 3,262	3,548 } 3,559	+ 8.8 } + 9.1
Motor .....	....*	11	.... }
Total horsed and mechan- ically propelled vehicles.... }	10,914	11,172	+ 2.4
Bicycles and tricycles .....	628	806	+ 28.3
Barrows .....	440	407	- 7.5
Total .....	1,068	1,213	+ 13.6
Total of all vehicles .....	11,982	12,385	+ 3.4

\* Trade motors were not separately recorded at the observations in June, 1902, but they were then practically non-existent.

In the Strand the holiday season shows a falling off in the aristocratic carriage and cab, and also, strangely enough, in the plebeian barrow. Omnibuses and trade vehicles both show a distinct increase, and cycle traffic goes up by over 28 per cent., in consequence of the holidays.

TABLE XIII.—*Vehicular Traffic in Holborn (at Southampton Row).*

Class of Vehicle.	Number on Tuesday, 8th July, 1902 (8 A.M. to 8 P.M.).	Number on Tuesday, 15th September, 1903 (8 A.M. to 8 P.M.).	Increase or Decrease per Cent. of 15th September, 1903, Traffic, Compared with 8th July, 1902, Traffic.
Omnibuses .....	2,915	2,976	+ 2·1
Carriages—			
Horsed .....	490 } 528	474 } 525	- 3·3 } -0·6
Motor .....	38 } 2,261	51 } 2,267	+ 34·2 } + 0·3
Cabs .....			
Carts, vans, and other trade vehicles—			
Horsed .....	3,684 } 8,684	4,022 } 4,032	+ 9·2 } +9·4
Motor .....	.....* }	10 }	.... }
Total horsed and mechani- cally propelled vehicles.... }	9,388	9,800	+ 4·4
Bicycles and tricycles .....	1,149	1,266	+ 10·2
Barrows .....	558	661	+ 18·5
Total .....	1,707	1,927	+ 12·9
Total of all vehicles .....	11,095	11,727	+ 5·7

\* Trade motors were not separately recorded at the observations in June, 1902, but they were then practically non-existent.

Here there was an increase in all classes of vehicles, except carriages, which show a very trifling falling off. Fourteen months had elapsed since the taking of the traffic on the first occasion, and the growth of the traffic may have counterbalanced any possible falling off due to the season.



TABLE XIV.—*Vehicular Traffic in Piccadilly (at Walsingham House).*

Class of Vehicle.	Number on Wednesday, 21st January, 1903 (8 A.M. to 8 P.M.).	Number on Wednesday, 2nd September, 1903 (8 A.M. to 8 P.M.).	Increase or Decrease per Cent. of 2nd September Traffic Compared with 21st January Traffic.
Omnibuses .....	4,578	4,694	+ 2.6
Carriages—			
Horsed .....	1,607	745	— 53.6
Motor .....	146 } 1,753	176 } 921	+ 20.5 } — 47.5
Cabs .....	5,504	3,566	— 35.2
Carts, vans, and other trade vehicles—			
Horsed .....	3,431	3,065	— 10.7
Motor .....	21 } 3,452	12 } 3,077	— 42.9 } — 10.9
Total horsed and mechani- cally propelled vehicles }	15,262	12,258	— 19.8
Bicycles and tricycles .....	463	1,335	+ 188.3
Barrows .....	319	282	— 11.6
Total .....	782	1,617	+ 106.8
Total of all vehicles .....	16,064	13,875	— 13.6

Thus in Piccadilly, owing to the holidays, carriages fell 47.5 per cent. and cabs 32.2 per cent., and there was a reduction of 10.9 per cent. in the number of carts and vans. Omnibuses showed a material increase in numbers, as also did private motor cars. The cycle traffic, it will be noticed, was nearly trebled.

The next table excludes barrows and cycles, and divides the other vehicles so as to show the proportion of omnibus traffic in each hour. This table refers only to the original observations.

The omnibus traffic in all three thoroughfares remains fairly constant throughout the day after 9 A.M., but "other vehicles" show considerable fluctuations. In connection with these figures it may be of interest to mention that, on a day in July, 1865, 8,220 vehicles are reported to have passed Half-Moon Street, going along Piccadilly, between 8 A.M. and 8 P.M. This gives an increase of 86 per cent. in thirty-eight years.

TABLE XV.—Comparison of Omnibus and other Vehicular Traffic.

Hour.	Number of Vehicles (Exclusive of Barrows and Cycles) Passing Both Ways along									
	The Strand (at Wellington Street).				Holborn (at Southampton Row).				Piccadilly (at Walsingham House).	
	Omnibuses.	Other Vehicles.	Total.	Percentage of Omnibuses to Total Vehicles.	Omnibuses.	Other Vehicles.	Total.	Percentage of Omnibuses to Total Vehicles.	Omnibuses.	Total.
8—9 A.M.	202	398	600	33·6	181	361	542	33·4	334	642
9—10 "	365	538	903	40·4	270	465	735	36·7	400	896
10—11 "	358	683	1,041	34·4	255	591	846	30·1	382	1,056
11—12 noon	328	673	1,001	32·8	239	578	812	29·4	387	1,172
12 noon—1 P.M.	350	637	987	35·5	250	608	858	29·1	374	1,060
1—2 P.M.	329	561	890	37·0	245	557	802	30·5	366	1,099
2—3 "	344	575	919	37·4	243	552	795	30·6	384	937
3—4 "	359	600	959	37·4	256	560	816	31·4	387	1,007
4—5 "	369	677	1,046	35·3	239	617	856	27·9	369	1,026
5—6 "	360	618	978	36·8	284	601	885	32·1	399	1,389
6—7 "	356	517	873	40·8	247	569	816	30·3	394	905
7—8 "	338	560	893	37·8	242	414	656	36·9	399	978
	4,053	7,037	11,090	36·5	2,951	6,468	9,419	31·3	4,575	15,284
										29·9

Among the records of the City Day Census is found the material for 1881 and 1891 in the following comparative table. The figures for 1903 were recently given before the Royal Commission by Captain Nott Bower, the Commissioner of City Police, to whose courtesy I am indebted for the details.

TABLE XVI.—*Vehicles Entering the City of London between the Hours of 8 A.M. and 8 P.M.*

Year.	Cabs.	Omnibuses.	Other Vehicles.	Total.
1881 (May) .....	12,986	4,915	40,685	58,536
'91 " .....	14,789	8,195	53,854	76,838
1903 (October) .....	11,151	9,616	65,983	86,750

During the last twelve years, then, there has been a slackening in the rate of increase, perceptible in the miscellaneous class, and very marked in omnibuses; while cabs show a large decrease, for which it is difficult to account, as the 1903 figure is 1,800 less than in 1881. Improved railway facilities and the waning popularity of the hansom hardly account for so large a falling off. No doubt, however, even in the City, cab traffic is likely to be heavier in May than October.

It must be remembered that all these figures are those of vehicles going one way only, so that the probable total wheeled traffic is double that shown in the table.

The traffic entering the City was divided in the City Census Reports under the headings of the various inlets. From these particulars I extract the following details, including the number of passengers, but in the latter no distinction is made between riders and pedestrians.

TABLE XVII.—*Traffic Entering the City of London in Twenty-four Hours.*

Points of Observation on City Boundary.	Number of Vehicles.		Total Passengers on Foot and in Vehicles.	
	1881.	1891.	1881.	1891.
London Bridge .....	10,783	14,867	78,943	107,421
Southwark Bridge .....	1,780	1,944	15,045	19,845
Blackfriars Bridge .....	7,292	8,287	43,567	69,888
Victoria Embankment .....	4,025	5,070	9,151	16,930
Temple Bar .....	5,309	6,172	45,918	81,672
Chancery Lane .....	1,325	2,864	12,758	32,298
Holborn Bars .....	7,325	9,069	55,222	82,367
Farringdon Street .....	2,707	4,160	26,705	42,086
St. John Street .....	2,917	2,467	21,665	31,218
Aldersgate Street .....	2,481	3,149	36,821	32,780
Finsbury Pavement .....	3,642	3,560	28,616	48,905
Bishopsgate Street .....	4,015	4,400	34,236	49,635
Aldgate .....	6,081	6,265	49,405	67,940
All other points of observa- tion .....	12,311	20,598	339,511	511,659
Total .....	71,893	92,372	797,563	1,186,094

During the ten years the number of vehicles increased by 28 per cent., and the number of persons by no less than 48 per cent. The most striking additions appear at London Bridge, Chancery Lane and Holborn Bars, in vehicles; and at Temple Bar, Holborn Bars, Blackfriars Bridge and Finsbury Pavement, in passengers. At two points vehicular traffic showed a falling off, and passenger traffic at one.

The records of traffic across the City bridges are more numerous than those for any other thoroughfare. Figures for six different dates are given in the next table.

TABLE XVIII.—*Vehicular Traffic over City Bridges.*

Year.	Period of Observation.	Number of Vehicles Crossing		
		London Bridge.	Blackfriars Bridge.	Southwark Bridge.
1850.....	8 A.M.—8 P.M. ...	13,099	5,262	—
'63.....	Twenty-four hours	25,960	10,653	1,094
'65.....	8 A.M.—8 P.M. ....	19,045	9,680	—
'81....	Twenty-four hours (one way only) }	10,783	7,292	1,780
'91....	Twenty-four hours (one way only) }			
1903.....	Twenty-four hours	29,872	20,466	4,508

By doubling the figures of traffic taken in a single direction, and estimating (where possible) the figures for the twelve hours, between 8 A.M. and 8 P.M., I am able to construct with approximate accuracy the following comparative table:—

TABLE XIX.—*Average Vehicular Traffic per Hour over City Bridges.*

Year.	London Bridge.	Blackfriars Bridge.	Southwark Bridge.
1850.....	1,092	438	46
'65.....	1,587	805	—
'81.....	1,431	975	237
'91.....	1,915	1,105	259
1903.....	1,343	1,388	340

Wheeled traffic over Blackfriars Bridge has been growing with some constancy, and it has now reached the same level as that to which London Bridge has fallen in consequence of the alterations, which are now approaching completion. The distinct decline of London Bridge wheeled traffic between 1865 and 1881 I am quite unable to account for.

The number of vehicles passing through the Blackwall Tunnel has continuously increased from 335,435 in 1898, to 862,843 in

1903, but the number of pedestrians has remained fairly constant at about 4,250,000 per annum. At Woolwich Ferry the number of vehicles crossing was 192,830 in 1890 and 478,168 in 1903, and the corresponding figures for pedestrians were 4,470,354 and 4,961,445 respectively.

### *Omnibuses.*

There are about 200 omnibus routes, or separate services of omnibuses, in Greater London, of which 97 connect various business centres with the suburbs, and may be called radiating routes; 21 run through the centre from suburb to suburb; 15 connect railway or tramway termini, and the remainder serve the suburbs only.

The radiating routes generally have their inner termini on the side of the central area opposite to the direction in which they run. Thus of the 19 routes having Liverpool Street as a terminus, 15 run in a westerly direction, all of them through the City, and 10 of them along the Strand. In the same way the 10 London Bridge routes are from the west and north, all passing through the City, and 8 of them along Oxford Street. Nearly all the Liverpool Street routes westwards are thus Strand routes, while the London Bridge routes westwards are generally Oxford Street routes. The result of this arrangement is a complete crossing of the two sets of routes at the Mansion House, the most congested point of London street traffic.

The total number of omnibus routes crossing the bridges, and the corresponding number of omnibuses per hour during the hours of full service, are as follows:—

TABLE XX.—*Omnibus Routes Crossing the Thames.*

Bridge.	Number of Omnibus Routes.	Number of Omnibuses per Hour (in Both Directions) during Hours of Full Service.	Bridge.	Number of Omnibus Routes.	Number of Omnibuses per Hour (in Both Directions) during Hours of Full Service.
London .....	18	332	Tower .....	2	42
Westminster ...	8	218	Albert .....	2	38
Blackfriars ...	4	160	Wandsworth.....	2	32
Waterloo .....	9	150	Chelsea .....	2	28
Putney .....	4	76	Hammersmith ...	1	12
Vauxhall .....	2	60	Blackwall Tunnel	1	18

The total number of routes of all kinds having railway stations in Central London as termini, and the number of omnibuses per hour on such routes, are as follows:—

TABLE XXI.—*Omnibus Routes Starting from Railway Stations.*

Railway Station.	Number of Omnibus Routes Using Station as a Terminus.	Number of Omnibuses Leaving each Station per Hour during the Hours of Full Service.	Railway Station.	Number of Omnibus Routes Using Station as a Terminus.	Number of Omnibuses Leaving each Station per Hour during the Hours of Full Service.
Victoria .....	17	215	Marylebone ....	3	15
Liverpool Street	19	208	Paddington ....	1	12
London Bridge	10	72	Edgware Road	1	10
King's Cross ...	6	69	Gower Street....	1	10
Waterloo.....	6	59	Euston .....	2	6
Charing Cross ..	7	50	St. Pancras ...	1	1
Baker Street ....	1	20			

These figures do not represent the whole extent to which omnibuses provide for the traffic to and from railway stations, as the routes which pass these stations also serve the same purpose.

Of the outlying omnibus routes only five are situated in the north and east of the county, the small extent to which these parts of the county are served by omnibuses being no doubt due to the better tramway and railway communication which exists there. Six outlying routes cross the river by bridges, viz., two by Wandsworth Bridge, two by Putney Bridge, one by Albert Bridge, and one by Hammersmith Bridge; one crosses the river by the Blackwall Tunnel.

The omnibus routes in the county range in length from 8·8 miles to 0·7 mile. Added together, so far as they are situated in the county, they aggregate a distance of 757 miles. A large number of the streets are used in common by two or more lines of omnibuses, and the total length of streets in the county in which omnibuses run amounts to 242 miles, of which 141 miles are north of the river and 101 miles south of the river.

The amount of omnibus traffic in these streets ranges from 2 to more than 600 omnibuses in the hour. The following is an approximate division of the 242 miles of streets according to the amount of omnibus traffic:—

TABLE XXII.—*Density of Omnibus Traffic.*

Number of Omnibuses per Hour in Both Directions (during Hours of Full Service).	Length of Streets in the County, Divided according to Amount of Omnibus Traffic.
480 and upwards.....	Miles.
(Intervals of one-fourth of a minute or less each way) }	0·57
480 to 360 .....	
(Intervals from one-fourth to one-third of a minute each way) }	4·43
360 to 240 .....	
(Intervals from one-third to one-half of a minute each way) }	6·47
240 to 120 .....	
(Intervals from one-half of a minute to one minute each way) }	14·64
Less than 120 .....	
(Intervals of over one minute each way) }	215·89
	242·0

The greatest congestion of traffic occurs at the points where the omnibus routes cross each other. If the traffic is heavy the omnibuses, as well as other vehicles, are held up, and have on re-starting to proceed at a walking pace, so that the number passing the crossing is less than half the number that could move along the open street in the same time.

TABLE XXIII.—*Important Omnibus Crossings.*

Locality of Crossings.	Number of Omnibuses per Hour during Hours of Full Service.
Bank .....	690
Piccadilly Circus .....	662
Oxford Street and Tottenham Court Road .....	628
Piccadilly and Hamilton Place .....	606
Elephant and Castle.....	582
Oxford Street and Orchard Street .....	582
Bridge Street and Parliament Street.....	520
Oxford Circus .....	504
„ Street and Bond Street .....	502
Strand and Duncannon Street .....	496
Oxford Street and Park Lane.....	478
Piccadilly and New Bond Street .....	472
Edgware Road and Praed Street .....	468
Strand and Wellington Street .....	448
Ludgate Circus .....	422
Fleet Street and Chancery Lane.....	398
New Oxford Street and Hart Street .....	366
High Holborn and Southampton Row .....	352
Brompton Road and Knightsbridge .....	324
Threadneedle Street and Old Broad Street .....	289
Victoria Street and Buckingham Palace Road .....	272
Edgware Road and Harrow Road .....	202
Duncannon Street and St. Martin's Place .....	200
Baker Street and Marylebone Road .....	174
St. George's Circus .....	160
Westminster Bridge Road and Kennington Road .....	130
Kennington Park Road and Kennington Road .....	118

The opening of the three tube railways now in operation is the only change in locomotion in the county of London likely to have affected the omnibus traffic. No data are available from which could be judged the exact effect on the omnibus traffic of the opening of these lines. The piecemeal extension of the City and South London line makes it almost impossible to give anything in figures showing the effect on the omnibus traffic.

The course of the Waterloo and City line is only to a small extent an omnibus route, and no change can be traced in the omnibus traffic as the result of the opening of the line.

The route of the Central London line affords better ground for judging the effect of the opening of a tube railway on the omnibus traffic. The line is in direct competition with one of the most important omnibus thoroughfares in London, from the Bank to the Marble Arch, a distance of  $3\frac{1}{8}$  miles, and also with that from the Marble Arch to Shepherd's Bush, where the omnibus traffic is considerable. It was opened in July, 1900.

Excluding the lines of omnibuses which cross, or only run for a short distance along, the route, the following is approximately the number of omnibuses per hour along the different sections of the Central London Railway route in 1895 and 1903 respectively:—

TABLE XXIV.—*Omnibuses on the Route of the Central London Railway.*

Section of Route.	Length of Section.	Number of Omnibuses per Hour Both Ways on Routes in Competition with Railway (during hours of Full Service).	
		1895.	1903.
	Miles.		
Shepherd's Bush to Notting Hill Gate	1	44	50
Notting Hill Gate to Marble Arch.....	$1\frac{1}{8}$	48	40
Marble Arch to Oxford Circus .....	$\frac{1}{2}$	390	390
Oxford Circus to Tottenham Court } Road .....	$\frac{1}{2}$	*274	222
Tottenham Court Road to Bank.....	$1\frac{1}{8}$	306	278
	$5\frac{1}{8}$		

This shows a material reduction in the number of omnibuses, except in the outlying section, and indicates that where a tube railway is for a considerable distance in competition with omnibuses, some reduction in the omnibus traffic must result, or, at any rate, the growth of that traffic be checked for some time.

The rate of growth of omnibus traffic generally has been, and continues to be, very great. The City of London Corporation found



that the number of omnibuses entering the City during the day in 1881 amounted to 6,176, and in 1891 to 10,389, an increase of 4,213, or over 68 per cent. The number in 1895 was 12,236, an increase of 18 per cent. since 1891. The number at the present time amounts to about 11,630 omnibuses in the day, a decrease of 606 omnibuses, or about 5 per cent., since 1895. The decrease since 1895 is doubtless due, to some extent, to the opening of the tube railways already referred to. A Central London train of seven coaches can carry as many passengers as thirteen omnibuses. There are 337 of these trains running to the Bank every day, being the equivalent of 4,381 omnibuses.

The increase in omnibus traffic in recent years is, however, very marked in other directions; for instance, in the number of omnibuses between the districts north and south of the river *via* Westminster Bridge. It is specially marked in the extension of the omnibus services in the outlying parts of the county. Thus the increase in the length of streets traversed by omnibuses since 1895 has been as follows:—

TABLE XXV.—*Omnibus Routes in 1895 and 1903.*

	Length of Streets Traversed by Omnibuses in		Increase.	
	1895.	1903.	Number of Miles.	Per Cent.
North of the river ...	121	141	20	17
South of the river ...	58	101	43	74
Total .....	179	242	63	35

In addition to the fact that omnibuses do not provide cheap fares for workmen, the fares are much higher than tramway fares for the ordinary passenger. The 350,180,257 passengers carried by tramways in Greater London in 1902 paid in fares 1,501,444*l.*, or 1*o*3*d.* per head. The 279,466,557 passengers carried by the two large omnibus companies in 1902 paid in fares 1,614,073*l.*, or an average of 1*o*3*o**d.* per head—a difference in favour of tramways of 0*o*36*d.* per head. There is no reason to suppose that the omnibus passengers travelled on the average longer distances than the tramway passengers. If it were possible for the whole of the omnibus passengers to be carried at tramway rates, it would, on the basis of the same difference of 0*o*36*d.* per head, amount to a saving to the public in fares of 720,000*l.* a year.

*Tramways.*

There were open for traffic on the 30th June last 186·5 miles of tramway in Greater London, of which 115·5 miles were within the area of the Administrative County. The following table classifies these lines according to ownership and method of working:—

TABLE XXVI.—*Ownership and Length of Tramways in Greater London.*

Tramways.	Horse.	Electric.	Cable.	Total.
	Miles.	Miles.	Miles.	Miles.
Owned and worked by public authorities .....	16·5	32·0	3·5	52·0
Owned by public authorities and worked by companies .....	48·5	10·7	Nil	59·2
Owned and worked by companies .....	51·0	23·5	0·8	75·3
Totals .....	116·0	66·2	4·3	186·5

The work of electrifying the London County Council lines is still proceeding, and no section has yet been worked by electricity for a complete year, so that no comparison of the traffic on the lines in public ownership between electric and horse traction is yet possible. The electric cars of the London United Tramways Company, however, do not appear to carry as many passengers per car-mile as the horse cars of the North Metropolitan Company.

How far London is still behind the provinces in tramway matters may be seen from the fact that only one-third of her mileage is worked by electricity, while taking the total mileage of tramways in England and Wales nearly three-fourths represent electric tramways. In total mileage London is even further in arrear, as will be apparent from the next table, taken from the evidence of Mr. J. W. Benn, L.C.C., before the Royal Commission.

TABLE XXVII.—*Tramway Mileage in Various Cities.*

City.	Ratio of Tramway Mileage to Inhabitants.
London .....	1 mile to 30,000 inhabitants.
Glasgow .....	1 " 11,900 "
Liverpool .....	1 " 8,400 "
Manchester .....	1 " 5,600 "
Birmingham .....	1 " 11,900 "
Leeds .....	1 " 9,500 "
Sheffield .....	1 " 7,300 "

The traffic on the tramways in Greater London for the year ending 30th June, 1903—taken from the Board of Trade Return—is shown in the next table, though all the figures included do not cover exactly the same period.

TABLE XXVIII.—*Traffic on Greater London Tramways. Year ending June, 1903.*

Tramways.	Car-Miles Run.	Passengers Carried.	
		Number.	Per Car-Mile.
Worked by public authorities .....	10,909,285	121,033,774	11·1
Worked by companies .....	26,178,539	240,136,878	9·2
Totals .....	37,087,824	361,170,652	9·7

The greater number of passengers per car-mile on the tramways under public management is probably due, in great part, to lower fares. Of the traffic on the lines worked by the London County Council I am able to give some further details, which are embodied in the two following tables. The first analyses the passengers according to the fares paid, and the second according to route.

TABLE XXIX.—*Number of Passengers on London County Council Tramways at each Fare.*

Year.	½d.	1d.	Two-Journey.	Exchange.	Transfers.
1899 .....	50,611,483	49,095,023	—	—	—
1900 .....	51,777,811	50,178,317	—	—	—
'01 .....	54,390,854	46,511,166	2,171,412	1,745,974	—
'02 .....	40,129,700	47,111,647	3,108,837	2,516,876	8,063
'03 .....	47,342,809	54,068,755	4,591,140	3,761,294	68,388

Year.	1½d.	2d.	3d.	Total.
1899 .....	9,749,599	5,784,558	1,500,985	116,741,648
1900 .....	9,757,239	5,893,620	1,359,075	118,766,062
'01 .....	8,656,013	5,227,597	1,322,068	120,025,084
'02 .....	9,031,180	4,953,988	1,178,629	108,038,920
'03 .....	10,858,896	5,941,047	1,628,683*	128,261,012

\* Including 104,242 at 2½d.

From 1st January, 1901, a two-journey ticket has been issued on workmen's cars, and to workmen on ordinary cars arriving up to 8 A.M., at 1d. each. This ticket entitles the holder to make another journey at any time, in any direction, and for any distance on any route on payment of another 1d. On taking the second journey he gives up the "two-journey" ticket and receives an "exchange" ticket. The figures show that as a rule about 80 per cent. of the "two-journey" tickets are utilized for a second journey. A somewhat similar plan is in vogue on the lines leased to the North Metropolitan Tramways Company.

During the last two years, while some of the lines were under reconstruction, the traffic on these lines was materially diminished; and in the course of 1902 additional lines were taken over; so that the figures give no real indication of the ordinary growth of traffic. But it seems clear that the passengers at the 2d. and 3d. fares, and to a less extent those at 1½d. fares, are steadily declining; and this is probably due to the competition, for long distances, of the City and South London Railway. Including the "two-journey" and "exchange" tickets with the ordinary tickets, there is a continuing, though small, increase in the number of 1d. fares. The short distance passenger, however, at the ½d. fare, has sometimes preferred to walk instead of risking the delay caused by the works of reconstruction; but the great cause of the reduction in ½d. fares in 1902 was the cessation of the omnibus service previously run across the bridges in connection with the southern tramways.

TABLE XXX.—*London County Council Tramways. Number of Passengers on each Route.*

Route.	Number of Passengers.				
	1899.	1900.	1901.	1902.	1903.
Tooting and Westminster Bridge, Blackfriars Bridge or Waterloo Station .....	20,756,056	21,775,654	22,279,664	19,785,287	28,167,258
Streatham and Westminster Bridge, Blackfriars Bridge or "Lord Wellington" ....	18,946,541	18,918,095	19,315,524	19,084,709	17,263,960
Greenwich and Westminster Bridge, Blackfriars Bridge, Waterloo Station or Rushey Green .....	22,720,915	23,083,317	22,902,549	26,128,342	27,968,233
New Cross and Westminster Bridge or Blackfriars Bridge .....	17,592,988	17,501,148	18,041,658	18,109,258	15,567,106
Rye Lane and Waterloo Station	5,642,636	5,396,615	5,581,138	5,576,910	4,918,317
Camberwell and Asylum Road or Vauxhall .....	9,033,804	8,530,951	8,341,028	8,450,740	6,652,170
Victoria and Vauxhall Bridge	2,127,042	2,120,230	2,150,959	2,269,995	2,207,956
North Street and Borough or Westminster Bridge....	—	—	—	557,134	6,510,320
East Hill and Borough or Westminster Bridge .....	—	—	—	821,488	9,481,169
"Lord Wellington" and St. George's Church .....	—	—	—	165,545	516,755
Chelsea Bridge and Clapham Junction or Lavender Hill	—	—	—	337,320	3,766,679
Workmen's trams .....	911,645	1,429,222	1,670,200	2,046,965	3,700,196
All night trams .....	1,545,854	1,860,786	1,822,587	1,721,467	1,550,398
Omnibuses .....	17,464,167	18,200,044	17,919,777	2,983,760	—
Total .....	116,741,648	118,766,062	120,025,084	108,038,920	128,261,012

The effect of reconstruction on the volume of traffic is very marked in 1903: but the Tooting lines, worked by electricity since May last, show the beginning of the resultant increase.

### *Pedestrians.*

Pedestrian traffic is heavier in the City of London than in any other area of similar extent, and the City records are extremely instructive. They do not lend themselves to exact comparisons in all cases, as passengers riding in vehicles are mostly included with pedestrians; and it is most unfortunate that no complete observation has been made since 1891. All the figures in the next table represent persons entering the City only, and it is probably a safe assumption that the total numbers of persons passing both ways would be about double these figures.

TABLE XXXI.—*Number of Persons Entering the City at Various Dates.*

Year.	Period of Observation.	Number.	Year.	Period of Observation.	Number.
1848 ....	8 A.M.—5 P.M. ...	315,099	1881 {	5 A.M.—5 P.M. ....	589,468
'60 {	7 A.M.—7 P.M. ....	527,636		5 A.M.—9 P.M. ....	739,640
	Twenty-four hours	706,621		Twenty-four hours	797,563
'66 {	5 A.M.—9 P.M. ...	679,744		5 A.M.—9 P.M. ...	1,100,636
	Twenty-four hours	728,986	'91 {	Twenty-four hours	1,186,094

Only the 1860 figures for the whole twenty-four hours are divided between the two classes, there being 535,535 pedestrians and 171,086 passengers in vehicles, the latter class thus standing for a trifle less than a fourth of the total.

Separate figures are given for 1881 and 1891 of the railway and steamboat passengers entering the City, and these are reproduced in the next table.

This table indicates not only a large growth of traffic, but enables us to follow one effect upon the travelling public of the provision of fresh facilities of locomotion. It would appear from the Mansion House Station figures, that traffic on the District Railway had been falling off during this period. But a glance further down the column shows that the deficiency at Mansion House is far more than made up by the traffic using the new stations at Cannon Street, Monument and Mark Lane. A similar movement of traffic took place at Ludgate Hill on the opening of St. Paul's Station.

The falling off in steamboat passengers is probably due to the inadequacy of the service and the increased severity of the competition of the District Railway consequent on its extension to Mark Lane.

TABLE XXXII.—*Pedestrians Entering the City of London from Railway Stations and Steamboat Piers in Twenty-four Hours.*

Points of Observation.	1881.	1891.
<b>Railway stations—</b>		
Blackfriars .....	3,541	5,520
Mansion House .....	14,774	9,453
Cannon Street (D.R.) .....	—	2,849
Monument .....	—	4,186
Mark Lane .....	—	4,629
St. Paul's .....	—	7,305
Ludgate Hill .....	18,956	16,733
Holborn Viaduct .....	2,852	4,706
Snow Hill .....	2,616	2,972
Farringdon Street .....	—	—
Aldersgate Street .....	9,380	14,903
Moorgate Street .....	18,422	16,950
Bishopsgate (M.R.) .....	9,325	13,180
Aldgate .....	—	7,389
Broad Street .....	30,444	43,917
Liverpool Street .....	33,890	52,413
Fenchurch Street .....	15,683	27,269
King William Street (City and S.L.R.) .....	—	5,789
Cannon Street (S.E.R.) .....	21,126	27,252
<b>Total .....</b>	<b>176,009</b>	<b>256,415</b>
<b>Steamboat Piers—</b>		
Old Swan .....	6,090	3,486
St. Paul's .....	1,160	519
Blackfriars .....	No figures	1,080
<b>Total .....</b>	<b>7,250</b>	<b>5,085</b>
<b>Grand Total .....</b>	<b>183,259</b>	<b>271,500</b>

The most serious fact disclosed by this table is the enormous number of persons entering the street at the junction of New Broad Street with Liverpool Street from the three railways there situated. The total numbers were 73,659 in 1881 and 109,510 in 1891.

Much of the congestion in the streets is due to the places at which passengers are set down by the various carrying companies. Omnibus routes generally run right through the central area to a terminus at its far side. Traffic is attracted by the facility thus given for passengers to alight at any part of the central area most convenient to them. But, generally speaking, railway and tramway termini are situated on the edge of the central area nearest to the districts which they serve. The result is that railway and tramway passengers, for the most part, are not carried as near to their ultimate destinations as they might wish; and consequently the streets are flooded with pedestrians in the neighbourhood of these termini in the morning hours. These either make their way on foot to their destinations, or take omnibuses or cabs for that purpose, thus adding

to the causes of vehicular congestion. In order to show the extent to which passenger traffic is concentrated at a particular point in this way, the directions taken by persons leaving the railway stations at Liverpool Street and Broad Street were observed in January, 1903, between 6 A.M. and 10 A.M. It was then found that, out of a total of 85,956 persons leaving the two stations, only 4,112 turned back in the direction of Shoreditch. The directions taken by the various passengers were as follows:—

Westwards, <i>vid</i> Eldon Street and Blomfield Street .....	25,060
South-westwards, <i>vid</i> Broad Street .....	29,940
Southwards, <i>vid</i> Bishopsgate Street Within .....	20,179
South-eastwards, <i>vid</i> Houndsditch .....	950
Northwards, <i>vid</i> Bishopsgate Street Without .....	3,323
„ <i>vid</i> the footway to Skinner Street .....	789

The City records preserve the fact that, during the twenty-four hours in May, 1860, 54,128 pedestrians crossed London Bridge from south to north. On the 11th February, 1901, during a similar period, the number was 59,543, an increase of only 10 per cent. It must, however, be borne in mind that, in the interim, Southwark Bridge had been freed from toll and the Tower Bridge built. The total number of pedestrians across London Bridge (both ways) on the 11th February, 1901, was 116,902.

It would appear from the figures compiled by the City Police that Monday furnishes the largest number of pedestrians, and Friday the largest number of vehicles, crossing the bridge.

The number of pedestrians crossing the roadways at the Bank was in

June, 1863 (8 A.M. to 5 P.M.) .....	56,235 persons.
October, 1900 (19½ hours) .....	183,190 „
April, 1903 (19½ hours) .....	248,015 „

Of these, 16,011 crossed by the subway in 1900, and 26,200 in 1903, so that the great majority of pedestrians at this point prefer the surface with all its risks. Some of the above figures were recently submitted to the Royal Commission by Mr. A. C. Morton, C.C. They are exclusive of “tube” passengers using the subway.

The great interest attaching to the traffic records of the City authorities adds much to the regret that the Metropolitan Police Commissioners have not published similar figures for other parts of London.

### III.—*Summaries and Comparisons.*

Some indication of the gross amount of travelling within the area of Greater London, and of its rate of increase, is almost a necessity in bringing such an attempt as the present to a close: but owing to the inadequacy of material it cannot be given with exactness. The total number of tramway passengers can now be extracted from the Board of Trade's Annual Return. The number of passengers carried by railways wholly or for the greater part

their length confined to Greater London can be given; and the traffic on the omnibuses of the London Road Car Company and the London General Omnibus Company can also be obtained. From these I have constructed a table comparing the total of these three classes of travellers with the population, and bringing out the annual number of journeys per head. This table will be found in Appendix B. It commences in 1867, and for the first eleven years has perforce to omit tramway passengers, of whom no record is available. During that period the number of journeys per head rose with some approach to regularity from 22·7 in 1867 to 39·6 in 1877. In 1878, when tramway passengers are included for the first time, the figure is 52·7, and it rises steadily in every year from 1879 down to 1902, when it stands at 136. The tramway traffic has increased much more rapidly than the other two classes, probably owing to cheaper fares, and is now sevenfold what it was in 1878. In the first twelve years shown in the table the railway traffic was trebled, while omnibus passengers only increased by 25 per cent. Then followed a period of cessation of railway development, and until the opening of the Central London Railway in 1900, the railway traffic increased only by slow degrees, and in some years actually receded. The omnibus traffic, on the other hand, grew much more steadily during this period; so that while, in 1878, its passengers were 70,000,000 less than railway passengers, in 1893 the two were practically equal, and in 1902 the omnibuses were nearly 6,000,000 ahead of the railways, notwithstanding the sudden rise in the last three years, due mainly to the Central London Railway. These and other variations can be more easily traced on the accompanying diagram, the curves on which show the number of journeys per head, both in total, and by each of the three principal modes of transit. The curve of population is added for the sake of comparison.

The next three tables, showing similar figures for recent years in New York, Paris and Berlin, furnish a basis for useful and interesting comparisons.

TABLE XXXIII.—*Passenger Traffic in New York City.*

Year.	Number carried by Surface Cars and Elevated Railways.	Estimated Population.	Number of Journeys per Head.
1900.....	809,947,205	3,437,202	235·6
1901.....	879,769,695	3,561,209	247·0
1902.....	937,151,762	3,688,693	254·1

More than three-fourths of the passengers are carried by the surface-cars, and less than one-fourth by the elevated railways. The above figures of traffic are taken from the report of the New York Rapid Transit Commission.



TABLE XXXIV.—*Passenger Traffic in Paris.*

Year.	Number of Passengers carried by					Estimated Population.	Number of Journeys per Head.
	Railway.	Tramway.	Omnibus.	Steamboat.	Total.		
1898 .....	86,952,323	161,761,498*	139,065,975	27,047,322	414,827,118	2,571,201	161.3
'99 .....	90,934,345	176,069,869*	146,363,683	28,276,291	441,643,177	2,600,987	169.8
1900 (Exhibition year) .....	131,229,044	206,440,491*	168,001,243	42,191,987	542,862,765	2,630,773	206.4
1901 .....	143,961,269	195,747,514*	133,202,893	22,412,163	495,323,839	2,660,569	186.2
'02 .....	170,671,866 } (approximate)	311,201,267	128,724,796	21,480,627	632,078,576	2,691,388	234.9

\* Incomplete returns.

TABLE XXXV.—*Passenger Traffic in Berlin.*

Year.	Number of Passengers carried by				Estimated Population ("Gross-Berlin").	Number of Journeys per Head.
	Railway.	Tramway.	Omnibus.	Steamboat.		
1898 .....	91,791,840*	216,965,824	53,817,422	765,886	2,311,817	167.2
'99 .....	94,807,081*	244,508,987	75,178,403	776,983	2,395,048	173.4
1900 .....	97,527,774*	280,349,160	80,568,714	963,197	2,481,084	185.2
'01 .....	88,629,802*	390,236,761	80,536,331	1,092,731	2,534,550	197.5
'02 .....	91,711,439*	362,575,474	78,670,498	828,116	2,604,109	205.0

\* These figures are for the Stadtbahn and Ringbahn (city and circular lines), and are therefore apparently incomplete.

Before it is possible to make even an approximate comparison between London and these three cities, some estimated figures must be added to those in the London table, in Appendix B, to represent the railway and omnibus traffic not included therein. I have doubled the railway figures and added 75 per cent. to the omnibus figures, in order to arrive at some approximate result, and this enables me to make the following rough comparison :—

TABLE XXXVI.—*Number of Journeys per Head in London, New York, Paris, and Berlin.*

City.	1898.	1899.	1900.	1901.	1902.
London.....	178·5	180·9	190·0	195·5	208·1
New York .....	—	—	235·6	247·0	254·1
Paris .....	161·3	169·8	206·4	186·2	234·9
Berlin .....	157·2	173·4	185·2	197·5	205·0

Excluding 1900 (the Paris Exhibition year) and 1902, the London figures appear to be higher than all others except those for New York. But the Paris figures are probably higher throughout, as 1902 was the first year in which the municipal authorities were able to obtain traffic returns from one of the principal tramway companies. It should also be remembered that the Paris and Berlin areas are very much smaller than that of Greater London. New York is not, strictly speaking, comparable with London, owing to the very different traffic conditions arising from the length and narrowness of Manhattan Island.

The effect of the present methods of transit upon congestion in the streets is not more important than the remarkable influence it exercises upon the distribution of population in the suburbs.

Generally speaking, districts within the county are served by tramways and omnibuses to a greater extent than by railways; and, except in particular cases, the railways do not have any important effect upon the changes in population going on at the present time. Outside the county boundary, however, railways probably exercise a preponderating influence upon these changes.

In order to make this point clear, it is first necessary to give some figures of the actual changes in population during recent years. For this purpose Greater London may be divided into three zones :—

(1.) A central area, in which the census population is stationary or decreasing. This includes the City, Westminster, St. Marylebone, Holborn, Finsbury, Shoreditch, Bethnal Green, Stepney, Bermondsey, Southwark, and parts of St. Pancras and Bermondsey.

This area forms a roughly elliptical figure, the centre of which is near St. Paul's Cathedral.

(2.) The remaining parts of the county of London.

(3.) Extra London, being the part of greater London outside the county.

These zones—and the whole area—are subdivided into five sections, viz. :—

*Western.*—From the river northwards to a line following approximately the Edgware Road to the boundary of Hertfordshire. This section includes the city of Westminster.

*Northern.*—From the Edgware Road to the Kingsland Road (approximately) in London, and in extra London the River Lea. This section includes the city of London and the whole of that part of Hertfordshire in greater London.

*Eastern.*—From the Kingsland Road and the River Lea southwards to the Thames. This includes the whole of that part of Essex which is in greater London.

*South-Eastern.*—From the Thames to the western boundary of the metropolitan boroughs of Bermondsey and Camberwell and of the parishes of Croydon and Coulsdon.

*South-Western.*—From the western boundary of Bermondsey, Camberwell, Croydon, and Coulsdon westward to the Thames.

The population of each zone and section at the three latest enumerations is set out in Table XXXVII.

It will be seen that the decrease in the central area was 4·2 per cent. in the 1881-1891 decennium and 3·2 per cent. in the 1891-1901 decennium.

The rest of the County of London had an increase in the 1891-1901 decennium of 13·5 per cent., showing already a very considerable falling off in the rate of increase.

In extra-London the eastern section shows much the highest rates of increase. The rates of increase in the western and northern sections are approximately the same; and the south-eastern and south-western, which have the lowest rates, also do not greatly differ in their rate of growth.

The growth of population in London depends partly on the influx from the provinces and elsewhere, and this is set out in Table XXXVIII, the results shown by which have been arrived at by deducting the excess of births over deaths from the increase in the enumerated population. The figures represent the difference between immigrants and emigrants.

The most important fact in this connection is that London continues to attract population from outside in an increasing ratio, which is now about 22,000 per annum. But great shifting is also

TABLE XXXVII.—Population in each Zone and Section in 1881, 1891, and 1901.

Section.	Central Area.			Rest of County.			Extra-London.			Total.		
	1881.	1891.	1901.	1881.	1891.	1901.	1881.	1891.	1901.	1881.	1891.	1901.
Western .....	229,784	201,969	183,011	458,127	568,053	643,974	195,847	289,225	420,041	883,758	1,059,247	1,247,026
Increase or decrease per cent. ....	...	- 12.1	- 9.4	...	+ 24.0	+ 13.4	...	+ 47.7	+ 45.0	...	+ 19.7	+ 17.8
Northern .....	588,096	537,050	496,224	559,045	616,242	648,002	185,749	289,705	417,009	1,332,890	1,442,997	1,560,235
Increase or decrease per cent. ....	...	- 8.7	- 7.8	...	+ 10.2	+ 5.2	...	+ 56.1	+ 43.9	...	+ 8.3	+ 8.0
Eastern .....	409,637	414,045	428,280	320,191	366,486	388,094	237,758	415,734	675,300	967,586	1,196,265	1,491,674
Increase per cent. ....	...	+ 1.1	+ 3.5	...	+ 14.4	+ 5.9	...	+ 74.9	+ 62.4	...	+ 23.6	+ 24.7
South-eastern .....	134,632	136,014	130,760	469,715	599,841	707,094	173,596	227,043	296,819	777,943	962,898	1,188,673
Increase or decrease per cent. ....	...	+ 1.1	- 3.8	...	+ 27.7	+ 17.9	...	+ 30.8	+ 30.3	...	+ 23.8	+ 17.7
South-western .....	286,445	290,183	291,861	372,852	496,379	617,155	144,918	185,837	239,778	804,215	972,399	1,148,794
Increase per cent. ....	...	+ 1.3	+ 0.6	...	+ 33.2	+ 24.3	...	+ 28.2	+ 29.1	...	+ 20.9	+ 18.2
Total .....	1,648,594	1,579,261	1,529,136	2,179,930	2,647,001	3,004,319	937,868	1,407,544	2,047,947	4,766,392	5,633,806	6,581,402
Increase or decrease per cent. ....	...	- 4.2	- 3.2	...	+ 21.4	+ 13.5	...	+ 50.1	+ 45.5	...	+ 18.1	+ 16.8

shown within the area of Greater London. Nearly half a million persons have migrated (so far as night residence goes) from the central area during the last twenty years. As the population of the remainder of the county has only increased (by migration) by less than 200,000 during the same period, the net overflow into extra-London is approximately 300,000; and the rest of the increase shown by the table comes from outside.

TABLE XXXVIII.—*Changes in Population due to Migration.*

Section.	Central Area.		Rest of the County.	
	1881-91.	1891-1901.	1881-91.	1891-1901.
Western .....	- 36,352	- 17,039	+ 41,102	+ 23,878
Northern .....	- 113,830	- 101,429	- 598	- 27,829
Eastern .....	- 54,087	- 51,787	- 3,717	- 23,285
South-eastern .....	- 16,165	- 21,358	+ 51,394	+ 31,692
South-western .....	- 38,615	- 43,621	+ 53,079	+ 49,032
Totals .....	- 259,049	- 235,234	+ 141,260	+ 53,488

Section.	Extra-London.		Total.	
	1881-91.	1891-1901.	1881-91.	1891-1901.
Western .....	+ 40,977	+ 84,357	+ 45,727	+ 91,196
Northern .....	+ 79,592	+ 75,062	- 34,836	- 54,196
Eastern .....	+ 114,447	+ 167,036	+ 56,643	+ 91,964
South-eastern .....	+ 24,565	+ 40,535	+ 59,794	+ 50,869
South-western .....	+ 21,107	+ 32,698	+ 35,571	+ 38,109
Totals .....	+ 280,688	+ 399,688	+ 162,899	+ 217,942

The average number of persons per acre in each zone and section is shown in the following table. In calculating the densities, the area of open spaces and water has been disregarded. The outer zone called extra-London has for this purpose been subdivided, the districts immediately adjacent to the county being given separately in order to show the gradations of density.

The average number of persons per acre is in London 68·7, as compared with 5·9 persons per acre in extra-London. The central area has an average of 148 persons per acre, and the rest of the county an average of 54. In the outside districts adjacent to the county the density averages 16·6 per acre, and in the rest of extra-London 2·5. It should be remarked that the greatest relative densities are always found in the eastern section, except in the extreme fringe of the area, and that the drop in this section between the two outer zones is strongly marked.

TABLE XXXIX.—*Density of Population.*

Section.	Population per Acre.				
	Central Area.	Rest of the County.	Districts Adjacent to the County.	Remainder of Extra-London.	Totals.
Western .....	102·4	84·6	18·7	2·1	11·6
Northern .....	135·9	84·0	13·2	2·7	18·0
Eastern.....	192·3	91·7	37·8	2·5	23·6
Total north of the river ...	144·5	85·9	22·4	2·4	16·7
South-eastern .....	126·0	30·6	8·4	1·6	12·7
South-western.....	178·9	47·7	10·5	3·6	17·5
Total south of the river ...	158·3	36·7	8·9	2·7	14·7
Grand total .....	148·0	54·0	16·6	2·5	16·0
	68·7		5·9		

In Appendix C an endeavour is made to bring together certain salient facts having a bearing on the connection between the sub-urban districts outside the county and the locomotion facilities available for persons requiring to travel to and from the central business area daily. Thus the particulars of the population of these extra-London districts are followed by particulars of the length of railway, number of stations, &c., in each, and the number of trains to the centre each week-day morning; and finally there are given the numbers, ascertained on particular days, of the morning passengers travelling by the three principal modes of conveyance to the central area.

It is, however, necessary to point out that the number of trains and railway passengers are those arriving at termini in the central area before 10.30 A.M.; and as it is not possible to separate the railway traffic exactly according to the section from which it comes, there is a certain amount of intermixture of this traffic between various sections. For instance, all the traffic coming into Waterloo is classed as S.W., though a good deal of it comes from the western section. All the Brighton Company's trains into London Bridge are classed under S.E., though many of them come from the S.W. district. All the Great Eastern trains into Liverpool Street are classed under E., though part of the Enfield branch of that line is situated in the N. district. These are examples of the great difficulty involved in any attempt to divide the London railway traffic on a geographical basis coincident with local areas. Still it is possible to draw one or two general conclusions. The population

in the eastern section of extra-London is greater by over a quarter of a million than that of any other section. Its density is more than double that of any other section. During the last decade the increase in its population is double that in any other section, and the amount of that increase due to immigration is also double that in any other section. Its population per mile of railway and per station is nearly twice as great as in any other part of extra-London. Yet, so far as ordinary trains are concerned, it is no better served than any other section, and it is considerably worse off than the south-east section, while the third-class return fares to Great Eastern suburban stations work out at comparatively high mileage rates in Table VIII. With regard to half-fare and workmen's trains, while better off than the north section, it is behind the west, south-east and south-west. But it possesses a great preponderance of twopenny workmen's trains. No other districts have a service of twopenny workmen's trains beyond the county. The 48 twopenny trains in the eastern section carry nearly 20,000 passengers daily to the central area, or an average of over 400 per train, in addition to those who alight at intermediate stations.

The majority of these twopenny trains arrive at the various termini before 7 A.M., and they are followed by 74 other cheap trains, carrying 35,069 passengers, or 474 per train. There is no traffic on half-fare or workmen's trains in any other section to compare with this in volume. Not only do the passengers by these trains in the eastern section largely exceed the number of similar passengers in other sections, but the number carried by each train is also much above the average. This excess of passengers per train in the eastern section extends also to the ordinary trains.

The districts near the Great Eastern line chiefly affected by the twopenny trains are Edmonton and Walthamstow. The first of these trains were put on under the Great Eastern Company's Act of 1864, which provides for one train every morning from Edmonton and one from Walthamstow to Liverpool Street, and for one return train on each branch in the evening at 1d. for the single journey each way. The next table shows the increase in the population of Edmonton and Walthamstow since that date and the number of morning trains at the twopenny return fare serving these districts run daily at the periods for which the information is available. The earliest official return of these trains gives no figure before 1883; but no doubt they were running for several years before that date.

In order to obtain a basis for comparing population at different dates it has been necessary to include New Southgate with Edmonton, and this inclusion to some extent disguises the real extent of

growth; but no such complication affects the Walthamstow figures, the inference from which is unmistakable.

TABLE XL.—*Increase of Population Compared with Twopenny Workmen's Trains.*

Year.	Edmonton (including New Southgate).			Walthamstow.		
	Population.	Rate of Decennial Increase per Cent.	Number of <i>ad.</i> Trains Run.	Population.	Rate of Decennial Increase per Cent.	Number of <i>ad.</i> Trains Run.
1851 ....	9,708	—	Nil	4,959	—	Nil
'61 ....	10,930	12·59	Nil	7,137	43·92	Nil
'71 ....	13,860	26·81	—	11,092	55·42	—
'81 ....	23,463	69·29	—	21,715	95·77	—
'83 ....	—	—	3	—	—	3
'90 ....	—	—	5	—	—	6
'91 ....	36,351	54·93	5	46,346	113·43	6
'97 ....	—	—	6	—	—	7
'99 ....	—	—	7	—	—	8
1901 ....	61,892	70·26	7	95,131	105·26	8

In comparison with the twopenny trains, the workmen's trains run in other quarters, at fares ranging up to 1*id.* return, do not appear to have so much effect upon the movement of population, and all the various sections are served about equally by trains of this class.

The conclusion which may be drawn, as much from general experience as from these particular facts, is that the provision of new and cheap means of transit in any special district tends to produce a too rapid growth of population, often followed by overcrowding, high rents, and other evils with which we are familiar within the county. Overcrowding in the morning train generally indicates overcrowding also in the suburban house; and fresh facilities, to be of real benefit, should be provided in all directions.



## APPENDIX A.

Table showing the Number of Local Inward Trains arriving at each London Terminus up to 10.30 A.M. on an ordinary Week-day, and the Number of Passengers they carried on the day of observation.

Terminus.	Number of Trains.					Number of Passengers by				
	Twopenny.	Other Workmen's.	Half-fare.	Ordinary.	Total.	Twopenny Trains.	Other Workmen's Trains.	Half-fare Trains.	Ordinary Trains.	Total.
<b>From the north—</b>										
Paddington .....	—	3	—	6	9	—	470	—	1,332	1,802
Baker Street .....	—	17	—	30	47	—	2,915	—	6,716	9,631
Euston .....	—	6	—	12	17	—	624	—	2,730	3,354
St. Pancras .....	—	1	—	13	14	—	1,200	—	1,871	3,071
King's Cross .....	—	4	5	28	37	—	1,200	1,813	10,060	13,073
Farringdon Street .....	—	—	2	4	6	—	—	486	723	1,209
Moorgate Street .....	—	47	3	75	125	—	11,602	656	26,419	37,676
Broad Street .....	23	2	—	77	102	8,157	540	—	31,794	40,491
Liverpool Street .....	28	20	21	80	149	13,075	9,342	13,481	39,564	75,462
Fenchurch Street .....	5	21	3	50	79	517	8,331	781	14,243	23,872
Bank .....	31	43	—	59	90	5,820	—	—	16,815	24,635
Mansion House .....	—	—	2	56	101	—	9,285	675	13,174	23,134
<b>Totals .....</b>	<b>87</b>	<b>163</b>	<b>36</b>	<b>490</b>	<b>776</b>	<b>27,569</b>	<b>44,459</b>	<b>17,891</b>	<b>164,441</b>	<b>254,360</b>
<b>From the south—</b>										
London Bridge (L. B. and S. C.) .....	—	24	—	63	87	—	5,508	—	25,286	30,794
" (S. E. and C.) .....	—	2	—	7	9	—	240	—	943	1,183
Cannon Street .....	—	6	—	31	37	—	1,475	—	10,988	12,413
Mansion House .....	—	4	—	5	9	—	289	—	275	564
Shoreditch and Liverpool Street .....	—	8	—	8	16	—	535	—	291	826
Angel .....	—	36	—	50	86	—	3,574	—	6,502	10,076
Moorgate Street .....	—	4	—	23	27	—	927	—	4,863	5,790
Farringdon Street .....	—	2	—	6	8	—	334	—	1,721	2,055
Snow Hill .....	—	3	—	7	10	—	691	—	1,930	2,621
Laugate Hill and Holborn .....	—	18	—	22	40	—	3,670	—	5,903	9,573
St. Paul's .....	—	17	—	12	19	—	1,131	—	4,802	5,933
Charing Cross .....	—	15	—	30	45	—	4,117	—	12,556	16,675
Waterloo .....	—	41	—	56	96	—	14,728	—	20,766	35,493
Victoria (S. E. and C.) .....	—	10	—	28	38	—	1,646	—	6,769	8,405
" (L. B. and S. C.) .....	—	17	—	28	45	—	3,171	—	10,640	13,711
<b>Totals .....</b>	<b>—</b>	<b>197</b>	<b>—</b>	<b>375</b>	<b>572</b>	<b>—</b>	<b>42,036</b>	<b>—</b>	<b>114,076</b>	<b>156,112</b>
<b>Grand totals .....</b>	<b>87</b>	<b>360</b>	<b>36</b>	<b>865</b>	<b>1,348</b>	<b>27,569</b>	<b>86,495</b>	<b>17,891</b>	<b>278,517</b>	<b>410,472</b>

## APPENDIX B.

*Passenger Traffic in Greater London.*

Year.	Number of Passengers carried by				Estimated Population of Greater London.	Number of Journeys per Head.
	Railway. (Local Companies.)	Tramway.	Omnibus. (Two Principal Companies.)	Total.		
1867....	40,547,398	In-formation not available	41,424,428	81,971,826*	3,605,510	22·7
'68....	47,533,915		40,968,187	88,502,102*	3,673,591	24·1
'69....	57,514,541		41,047,521	98,562,062*	3,742,956	26·4
1870....	59,424,414		42,935,471	102,359,885*	3,813,632	26·8
'71....	72,636,318	In-formation not available	43,556,545	116,192,858*	3,885,641	29·9
'72....	91,698,677		44,523,361	136,222,038*	3,965,864	34·4
'73....	89,773,798		46,066,247	135,840,045*	4,047,745	33·6
'74....	92,205,584		48,538,896	140,744,480*	4,131,315	34·1
'75....	105,659,125		49,720,038	155,379,163*	4,216,611	36·8
'76....	116,326,889		51,157,946	166,484,835*	4,303,668	38·6
'77....	121,381,637		52,853,630	174,235,267*	4,392,521	39·6
'78....	126,241,393	53,887,498	56,039,295	235,668,186	4,483,210	52·7
'79....	129,554,171	56,341,767	55,531,827	241,427,765	4,575,771	52·7
1880....	133,877,485	64,817,361	57,722,231	256,417,077	4,670,243	54·8
'81....	139,233,690	72,038,962	58,389,997	269,662,649	4,766,661	56·6
'82....	141,036,733	86,600,382	64,251,230	291,888,345	4,847,001	60·2
'83....	151,076,412	99,029,709	67,888,416	317,994,537	4,928,695	64·5
'84....	149,842,029	115,074,804	78,178,516	343,095,349	5,011,765	68·5
'85....	159,235,399	127,280,383	83,883,168	370,398,950	5,096,235	72·7
'86....	165,050,887	132,529,504	90,708,966	388,289,357	5,182,130	74·9
'87....	157,789,526	145,902,087	108,323,639	412,015,252	5,269,472	78·2
'88....	160,254,377	154,922,236	118,073,103	433,249,716	5,358,286	80·8
'89....	161,501,818	170,542,740	133,722,139	465,766,697	5,448,599	85·5
1890....	167,299,200	191,041,904	148,531,099	506,872,203	5,540,430	91·5
'91....	180,026,117	198,569,584	158,926,250	537,521,951	5,633,806	95·4
'92....	181,839,024	207,885,926	172,623,667	562,348,617	5,726,997	98·2
'93....	179,163,255	215,805,947	179,504,329	573,973,531	5,822,613	98·5
'94....	184,428,007	231,522,014	179,742,122	595,692,143	5,920,732	100·6
'95....	184,411,600	249,996,979	191,076,010	625,484,589	6,021,433	103·9
'96....	189,534,863	279,518,865	212,628,471	681,732,199	6,124,812	111·3
'97....	196,900,213	297,577,280	231,205,048	725,682,531	6,210,779	116·8
'98....	194,051,872	312,464,404	242,164,485	748,680,761	6,299,321	118·9
'99....	196,505,405	306,515,307	261,019,076	764,039,788	6,390,534	119·6
1900....	214,537,095	340,203,066	264,503,868	819,244,029	6,484,516	126·3
'01....	236,506,162	340,772,414	269,933,759	847,212,335	6,581,402	128·7
'02....	273,767,648	358,119,754	279,466,557	911,353,959	6,702,063	136·0

\* Excludes tramway passengers.

## APPENDIX C.

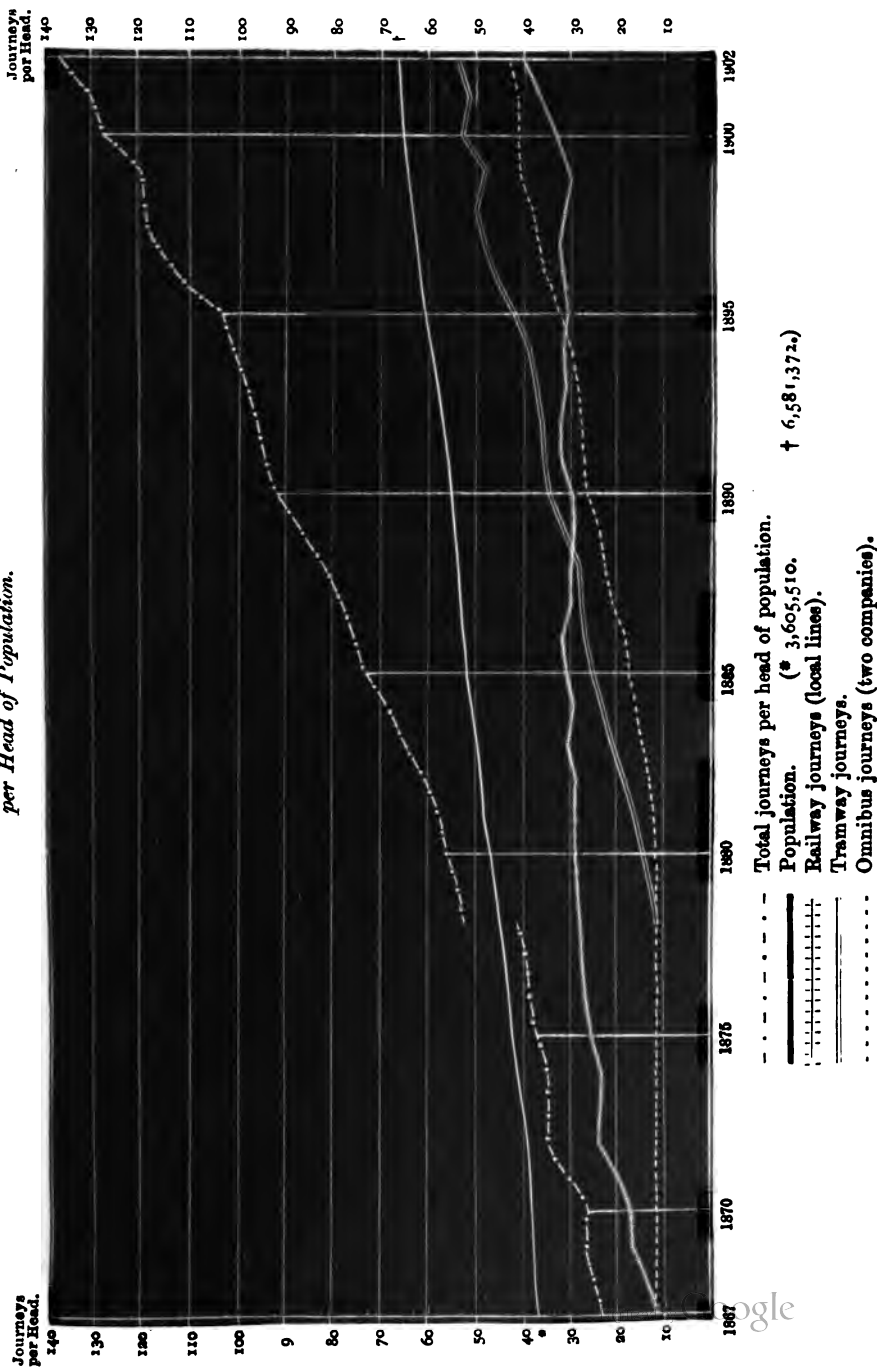
*Particulars of Population and Railways in Extra-London, and of Regular Morning Passengers to the Central Business Area, Subdivided in Geographical Sections.*

Heads of Information.	Western Section.	Northern Section.	Eastern Section.	Total North of the Thames.	South-east Section.	South-west Section.	Total South of the Thames.	Total.
Population beyond county boundary—								
1881.....	195,847	186,749	237,758	619,354	175,596	144,918	318,514	937,868
'91.....	289,225	289,705	415,734	994,664	227,043	185,837	412,880	1,407,544
1901.....	420,041	417,009	675,300	1,512,350	295,819	239,778	535,597	2,047,947
Increase due to migration—								
1881-91.....	40,977	79,592	114,447	235,016	24,565	21,107	45,672	280,688
'91-1901.....	84,357	75,082	167,086	326,455	40,535	82,698	73,233	399,688
Population per acre, 1901—								
In districts adjacent to the county.....	18.7	13.2	37.8	22.4	8.4	10.5	8.9	16.6
In remainder of area.....	2.1	2.7	2.5	2.4	1.6	3.6	2.7	2.5
In the area as a whole.....	4.3	5.5	11.9	6.6	4.6	4.7	4.6	5.9
Length of railways.....	100.1	67.3	65.3	232.7	86.4	58.9	145.3	378.0
" per square mile.....	0.63	0.52	0.69	0.61	0.84	0.66	0.75	0.66
Population per mile of line.....	4,196	6,196	11,524	6,692	3,424	4,071	3,686	5,516
Number of railway stations.....	60	55	51	166	47	43	90	256
" per square mile.....	0.38	0.43	0.54	0.43	0.45	0.48	0.47	0.44
Population per station.....	7,001	7,532	13,241	9,111	6,294	5,676	5,951	8,000
Number of week-day morning trains to the central area—								
Twopenny.....	31	8	48	87	—	—	—	87
Workmen's.....	76	37	50	163	98	104	197	360
Half-fare.....	2	10	24	36	—	—	—	36
Ordinary.....	160	170	160	490	214	161	375	865
Total.....	269	225	282	776	307	265	572	1,348

*Particulars of Population and Railways in Extra-London, and of Regular Morning Passengers to the Central Business Area,  
Subdivided in Geographical Sections—Contd.*

Heads of Information.	Western Section.	Northern Section.	Eastern Section.	Total North of the Thames.	South-east Section.	South-west Section.	Total South of the Thames.	Total.
<b>Number of passengers carried by—</b>								
Twopenny trains .....	5,820	1,820	19,929	27,569	—	—	—	27,569
Workmen's " .....	15,275	8,377	20,807	44,459	18,917	23,119	42,036	86,495
Half-fare " .....	675	2,954	14,262	17,891	—	—	—	17,891
Ordinary " .....	44,066	57,778	62,597	164,441	69,510	44,566	114,076	278,517
<b>Total trains .....</b>	<b>65,836</b>	<b>70,929</b>	<b>117,595</b>	<b>254,360</b>	<b>88,427</b>	<b>67,685</b>	<b>156,112</b>	<b>410,472</b>
<b>Average number of passengers per train—</b>								
Twopenny .....	188	227	415	317	Nil	Nil	Nil	317
Workmen's .....	201	226	416	273	203	222	213	240
Half-fare .....	337	295	594	497	Nil	Nil	Nil	497
Ordinary .....	275	340	391	336	325	277	304	322
<b>Total .....</b>	<b>245</b>	<b>315</b>	<b>417</b>	<b>328</b>	<b>288</b>	<b>255</b>	<b>273</b>	<b>305</b>
<b>Number of week-day morning passengers to the central area by—</b>								
Tramway .....	—	24,980	5,802	30,582	15,981	9,019	25,000	55,582
Omnibus .....	12,062	17,200	4,232	33,544	8,924	5,633	14,557	48,101
<b>Total week-day morning passengers to central area by conveyance .....</b>	<b>77,898</b>	<b>113,109</b>	<b>127,479</b>	<b>318,486</b>	<b>113,332</b>	<b>82,337</b>	<b>195,669</b>	<b>514,155</b>

GREATER LONDON. Diagram showing Development of Internal Passenger Traffic, Increase of Population, and of Journeys per Head.



• DISCUSSION *on* MR. E. J. HARPER'S PAPER.

THE PRESIDENT, before inviting discussion, informed Fellows of the Society then present that at the last meeting of the Council on Thursday a resolution was unanimously passed pressing the Government to take the step on which the Society had so often before put forward its views, viz., the necessity of taking an intermediate census in 1906; of course, on a much smaller scale, and without the details of the ordinary decennial enumerations. A letter requesting the President of the Local Government Board to receive a deputation had been sent, and their energetic colleague and Vice-President, Sir Francis Sharp Powell, would bring forward a resolution in the House of Commons on the subject, which it was possible might come on that evening, and to which he invited publicity and support.

MR. G. J. HYDE (Great Eastern Railway Company) said there were two or three points to which he might refer, on which Mr. Harper could perhaps give a little more information. With reference to the half-fare trains mentioned on p. 182, it was stated that the cost of return tickets was generally that of ordinary single fares, but he might point out that on the Great Eastern Railway they cost half the return fares. On p. 185 he noticed a statement to the effect that the business traffic only occupied about four hours. He supposed the author was only dealing with the morning traffic, as it was generally accepted that four hours in the morning and four hours in the evening should be reckoned, making a total of eight business hours. As regards the workmen's fares, there was a statement on p. 186, that with the exception of the Great Central, the Great Eastern, the Great Northern, the Great Western, the Midland, and London and Tilbury Railways, there was also an outward service of workmen's trains from the termini. The Great Eastern Railway looked on the half-fare trains as workmen's trains, and they ran both from the termini, and to them. The statement, therefore, as it stood, was liable to be misunderstood, and gave the impression that no cheap tickets were issued from London.

MR. W. M. ACWORTH said it had interested him very much to learn, on the authority of one of the chief officers of the London County Council, that "the provision of new and cheap means of transit in any special district tends to produce a too rapid growth of population, often followed by overcrowding, high rents, and other evils with which we are familiar within the county." Seeing that "fresh facilities, to be of real use, should be provided in all directions," and seeing that, English conditions being what they are, it was impossible to imagine that fresh facilities in all directions could be obtained by legislative or executive compulsion, he trusted that Mr. Harper's admission might be taken as a sign that the London County Council were repenting of their well-intentioned but ill-advised activity in the matter of workmen's trains. In Table XXXVI he would like to point out in the first place

that the figure of 208 in 1902, given as the number of journeys per head of population in London, was not, as the other figures in the same table were, a statistical figure, but a guess. He did not complain of it because, of course, Mr. Harper could not do anything better, but it was arrived at by taking the railway figures actually enumerated of passengers on the London local lines and doubling them on the assumption that the number on through lines was equivalent to that number. That was a guess in the absence of statistics. But for his own part he confessed it seemed somewhat far from the truth. His guess as against Mr. Harper's would be that, taking the main line railways, you were fairly entitled to assume that in the case of the lines south of the Thames, only London passengers, except a negligible quantity, were carried. Although a passenger lived at Guildford, Reigate, or Brighton, and came up to London day by day, he was still a London passenger for whom one must provide. For that matter, if he came from Liverpool and did his business, and went back again, he was also a London passenger. He would therefore suggest that really a much higher percentage of the main line passengers of most of the companies belonged to London's traffic. He would write off the London and North Western, which had an enormous suburban traffic around Liverpool, Manchester, Birmingham, and the Great Western, and nearly all the Midland passengers. But the great bulk of the Great Northern, and he had no doubt nine-tenths of the Great Eastern passengers either began or terminated their journeys within the Metropolitan Police area. Then the addition of 75 per cent. to the number of the omnibus passengers rather startled him, and he wished the author would enlarge upon it. He fancied the two great omnibus companies took the bulk of the passengers, and that the rest—he would not call them "Pirates" but independent 'buses—were not at all of equal importance. Further, Table XXXVI did not compare like with like. The author's estimate was supposed to include for London all railway passengers, *plus* omnibus passengers, *plus* tramway passengers. For New York the table only included the elevated railways, *plus* the street railroads. And there was not anything like so large a traffic into New York by main line railways either coming across from New Jersey or coming into the Great Central station, still the numbers were far from negligible. In Paris, again, the table counted all the railways, including both the metropolitan and the main line railways, *plus* omnibus and trams. Berlin, once more, went back to the New York system, and only gave local railway passengers, neglecting those carried by the main lines. It seemed to him rather unfair to the valuable information given in other tables that figures of that sort should stand forward in a sort of quotable shape, because it would not do justice to the paper if it were copied and somebody picked holes in it. Table XXVII showed the melancholy fact that London had only one mile of tramways to 30,000 inhabitants, or as one is to four as compared to Sheffield, which had one mile for every 7,300 inhabitants. But he should like to carry the table further, and having given Sheffield, which apparently was something to be proud of for Great Britain,

he would have liked the table to have shown what the tramway standard in America was. He thought that America would about take it up where England left off, running up through the great towns and culminating with St. Louis, which had roughly one mile of tramway for every 1,000 of the population. The question why England was so lamentably behind was perhaps hardly of a statistical nature.

The Hon. R. P. PORTER said he would ask Mr. Harper if he had included Brooklyn in New York? He thought the author had included the population of Brooklyn, but not the tramway traffic. He fancied the average traffic for Brooklyn would be something like 325,000,000. New York now included Brooklyn. On being informed that that was so, he said he thought the population of Brooklyn was about a million, and there were about 325,000,000 tramway passengers. The metropolitan surface lines carried about 650,000,000 a year—about 440,000,000 direct, and over 200,000,000 of transfers—or altogether something like 650,000,000. The traffic on the elevated lines would make up a total of nearly 900,000,000. Therefore, if the population included Brooklyn, it would be very unjust to the City of New York if the table should go out as it was unless the author was quite sure about it. The tramway or elevated railway traffic of Greater New York—that is of the population Mr. Harper mentioned in his table—was in the neighbourhood of 1,200,000,000 last year.

Dr. BENEDICT W. GINSBURG did not believe that legal proceedings were instituted so willingly against overcrowding in trams owned by municipal authorities, as when occurring in those owned by private companies. Therefore it was very possible that they might carry more passengers per tram mile, because they were allowed to carry more.

Mr. JESSE ARGYLE said: On p. 183 there was a table as to the extent of overcrowding on the morning trains; but it would be interesting to know where the point or points were on the different lines at which the count had been taken, because it would make a good deal of difference. On the Walthamstow line, if one were to take the average number in a workmen's train just after it left James Street, it would be very likely to work out at a higher figure than at anywhere lower down the line. On the next page it was shown that the carrying capacity of the Great Eastern was greater than any other line. That was a useful lesson, because it was not that the station platforms were longer, but because the trains were built to comfortably accommodate twelve passengers in each compartment. It was an excellent improvement, which it seemed to him might very well be followed on other railways. Coming to the question of vehicular traffic over the City bridges, the table on p. 194 was very significant, as showing the little use made of Southwark bridge in comparison with the others. It was quite evident that Southwark bridge carried the key to any improvement in vehicular traffic going north or south across the City. Something



ought to be done to make that bridge more used than it was at present. He agreed with the author that it was a great pity no figures were available since 1891 as to the number of persons entering the City, and he would venture to suggest to the Society that they might use their influence to induce the City authorities to take another census of that kind. He thought it had been overlooked rather than deliberately abandoned, and that any representation made would probably be favourably received.

Sir GEORGE BARTLEY, K.C.B., M.P., said as he happened to be one of the Traffic Commissioners, he could not say very much. The great difficulty of the question was its gigantic proportions. A fact which impressed one when going through the figures in America, was that the more facilities for travelling were increased, the more these very facilities so increased the traffic, that in a very short time, somehow or other, the difficulties on the line were again increased. From the figures given in the paper he gathered that there had been a reduction in the number of omnibuses along Oxford Street, but it was certainly in evidence before the Commission that, although there was a reduction in the first few months after the tube was opened, the result very shortly after was that the same number of omnibuses were engaged, and that now even a larger number were employed on that line, or close to it, than there were before the railway was opened. This state of things was analogous to that found in America, and in New York especially, where the accumulation of facilities of locomotion had increased the amount of traffic. They thus arrived at the remarkable condition that those who owned the tramways and the overhead lines were anxious to have subways under the same streets, because they considered that, although it might be thought a competing line, yet from the fact that it increased the facilities of locomotion it would add to their business overhead. He believed this fact opened a door which many people in London did not realise, namely, that competing lines almost on the same track added to the traffic on each rather than reduced it. The figures showed the enormous increase of traffic in the last few years, and taking the table which had been criticised, it certainly was not wrong in the sense of its being exaggerated. It showed that in London alone there was an increase of something like 20 per cent. in the number of journeys per individual in the last five years. A great departure must take place to facilitate intercommunication between one part of London and another. There was a prejudice against some modes of conveyance. The overhead railway he believed had very few friends. In New York and Boston, where they had it, and in Philadelphia, where they were going to put it, very few people seemed to like it. There was another subject which would have to be faced; they would have to consider making some new great thoroughfares for the traffic. Threadneedle Street, which a few years back was considerably widened, and in the middle ages might have been thought wide, was now very narrow, and so were many main thoroughfares, and if the enormous growth of traffic and the continual habit of travelling which civilisation developed went

on, it seemed to him that it would be necessary to consider very seriously the problem of new main thoroughfares in several directions.

Mr. G. J. HYDE said he might refer to one of the statements in the paper on p. 213 upon which Mr. Harper had touched in his reference to the Great Eastern suburban district. Mr. Acworth had referred to Walthamstow, and drew an inference obviously suggested by the tone of the paper, which was, perhaps, somewhat unjustifiable. The paper spoke of the statistics of Walthamstow and Edmonton, and the growth of the *2d.* trains, and consequent growth of the population; and Mr. Acworth evidently drew the inference that the *2d.* workmen had been entirely the cause of the growth of the population at Walthamstow; but that was hardly in accordance with the facts. The *2d.* workmen were not in such great prominence at Walthamstow as they were at Edmonton. He had not the figures in his head, but he thought a reference to the company's time tables would prove that there were more *2d.* trains from the Edmonton line than there were from Walthamstow. The very large growth of population at Walthamstow had taken place since 1885, when the half fares were put into operation; that was the primary cause of the exceedingly large growth of population, which, during the last decade, had more than doubled itself. The greater part of the population of Walthamstow travelled by the half fare trains, no less than nine of which ran between 7.30 and 8 o'clock, and carried in thirty minutes 7,000 people into London: this being almost the greatest problem of suburban traffic they had to face. The *2d.* workmen was not the real problem—it was not they who had filled up the district, but rather the better class half fare passenger, who, not caring to pay full fare, preferred to travel earlier in order to avail himself of the *4d.* or *4½d.* fare, according to which end of the district he travelled from. He mentioned this to clear up what might be a misconception. He was sorry he could not answer in the sense Mr. Acworth would probably have liked, his question about the proportion of London passengers. If his memory served him rightly, he thought, including season ticket holders, the Great Eastern Railway Company carried about 140,000,000 passengers per annum. The numbers through Liverpool Street were about 54,000,000, and with the three other London stations, Bishopsgate, Bethnal Green, and Fenchurch Street, something like 80,000,000; but what proportion of these travellers originated in, or were destined for the suburbs, he was unable to state, nor could he state what local passengers there were to other stations within the twelve-mile area, or what portion of the total number carried was applicable to the suburban districts, no doubt a large proportion of the whole.

Mr. OWEN FLEMING, referring to Sir George Bartley's remark as to the various kinds of conveyance which were under the consideration of the Traffic Commissioners, wished to enter a strong protest against anything in the nature of an elevated railroad. With regard to the use made of Southwark bridge, the reason it

was not more used was because of the gradients; but he believed that the question was now under the consideration of the City Corporation with the idea of improving them.

Mr. J. A. BAINES, C.S.I., in moving a vote of thanks to the author of the paper, agreed with the apprehension expressed by Mr. Acworth as to the public inconvenience likely to be caused at some future time by the increasing congestion of working class population in the north-east of London, but he thought that the danger of recrudescence of the slum characteristics might be minimised by the adoption of building regulations enforcing the same regard for court and roadway as those in force in the London county. As to the importance assigned in the County Council inquiries to working-class traffic, he thought that it was justified by the proportions of that traffic to the total of passengers, and by its concentration into certain parts of the day. Considering, moreover, the extent and variety of the goods traffic to and from the docks, as well as within London itself, it was remarkable that the provision made for the working classes was as good as it is. He feared that the narrow and crooked thoroughfares of a great part of London would be found such an obstacle to the universal extension of tramways in the business parts, that the reduction of 720,000*l.* in fares referred to must be held to be one of the statistical fantasies of which we have heard before. The record of passenger traffic on the scale undertaken by the County Council was no doubt admirable, but it had its predecessor in the local record of considerable utility, procured by boroughs when re-paving, &c., was under consideration. Dr. Ginsburg would find that overcrowding on the Surrey side trams had been complained of, and those in fault had been fined, and, as complaint could be laid by anyone, there could be no favouritism on the part of the Council which owned the vehicle. With reference to the tables, he called attention to the remarkable regularity between the growth of traffic by the different sorts of vehicle, given in Appendix A, which would have been very striking had the diagram been drawn upon a logarithmic instead of an arithmetical scale. He begged, in conclusion, to propose that the thanks of the meeting should be accorded to his old friend, Mr. Harper, for his paper, to whose aid in statistical matters he had been deeply indebted when a member of the County Council.

The PRESIDENT, in putting the motion, said he must take the opportunity to add his own thanks to Mr. Harper for bringing these figures before the Society. Besides the advantage of discussion that evening, such data were likely to bear fruit hereafter, because they got enshrined in their *Journal*, and were available for reference even under remote and unlikely circumstances. It would, however, be well to bear in mind that, important as the subject now before them was to people in London, such as most of those present, the mechanical congestion of traffic was only one factor in that still larger problem to which he called attention two years ago in his address of the enormous and accumulating difficulties recognised to lie ahead in that general tendency to

excessive urban agglomeration which was going on in all countries, but most of all in such a far-stretching city as London at the present time. The peculiar character of the London traffic had been very well described that evening. He quite agreed with what had been said, that the time had come for a new census of those entering the City itself. Statistics later than those of 1891 would be of material value if they could be obtained. Everyone who had lived in London for many years must have seen this increased quantity of movement to which Mr. Baines had called attention. Journeys made twice a day were now sometimes made four times a day as facilities grew. Within their own knowledge many people came up to work in the morning, went home, then came up again to theatres and amusements, and back again late at night, doubling and trebling the traffic to be reckoned with in older estimates. With regard to the American and other foreign figures quoted, he was disposed to agree with the criticism of their comparability. He asked especially whether the New York data included the vast steamer ferry traffic, which was one of the most striking things in New York life. He would not detain them with any further comments, but put the motion, and then ask Mr. Harper to reply.

The vote of thanks having been carried unanimously,

MR. E. J. HARPER, in reply, denied any claim on his part that the London County Council was the first to take statistics of traffic. Mr. Baines must have overlooked the fact that he gave special credit to the City authorities, especially to the defunct body of City Commissioners of Sewers. The borough councils he knew had taken statistics, but they had not published them. Credit was due to the City in the first instance, and in recent years to the County Council for publishing most valuable statistics of traffic. He hoped more would be done in that direction in the future. As Sir George Bartley had given him the opportunity, he should like to point out that the evidence given with regard to the effect on the omnibus traffic by the competition of the tube had been very carefully worded. The impression left on his mind was that along the direct route of Oxford Street itself, there was found to-day a smaller volume of omnibus traffic. But the tube had also acted as a feeder to omnibuses in other parts, and the omnibus service which traversed part of Oxford Street, and went further on in other directions had no doubt increased in consequence. Therefore there was a certain amount of truth on both sides. Mr. Hyde had given them some interesting figures with regard to the traffic on the Great Eastern, and he would point out that the four hours "rush" traffic should be taken both ways, so that they would arrive at the same figure. He was glad that the half-fare trains charged only half the actual return fare. He was aware that the Great Eastern had half-fare outward trains, but he did not call half-fare trains "workmen's trains" in the strict sense of the word, and that was the reason they were not referred to under the head of "workmen's trains outward service." He was much indebted to Mr. Acworth for his criticisms, but he would point out that


Mr. Acworth did not realise, and perhaps others did not, that his intention all through the paper was to deal with what he might term for want of a better phrase, "domestic traffic," i.e., the domestic traffic of Greater London. Similarly, in seeking to compare that traffic with New York, Paris, and Berlin, he had tried to take only the domestic traffic of those towns. He had excluded, as far as he had been able, any passengers coming from any distance outside the area, and dealt with purely local traffic. If once one got outside the area of greater London, or the area of the city of New York, one was compelled to include a very much wider area. His difficulty all through had been to find some line of demarcation between the long-distance and the essentially short-distance passenger. It might be said that the man who came up from Brighton two or three times a week ought to be included; but, if he were included, the further question forced itself upon one—where was the line to be drawn? Even in greater London there were a large number who did not come to the centre every day, and therefore it seemed to him that, in order to arrive at anything like a local figure, one must confine oneself as far as possible to local journeys. With regard to the basis of the figures to which Mr. Acworth and Mr. Argyle had specially referred, he must decline to show details of his guess, but he arrived at a general percentage, which he applied on an earlier page of the paper. He thought anyone who took the Board of Trade returns, and went through them company by company, would probably arrive at something between his 250,000,000 passengers as a minimum, and 300,000,000 passengers as a maximum limit. With regard to the omnibuses, the reason for adding 75 per cent. was that the total number of omnibuses licensed in greater London was about double the number belonging to the two companies named; and, assuming that the local omnibus companies (whose business in the outlying parts of the area had considerably increased of late) did not carry the same number of passengers per omnibus as the two big companies, he put down 75 per cent. as a rough approximation. He desired nothing better than that those who were able should give the actual facts. The public and the shareholders would be greatly indebted to that railway manager who would have the courage to go considerably further than any company had yet gone in giving certain details of passenger traffic. He would like to disclaim bringing any indictment against workmen's trains. The fact was that if the argument in the last page of the paper was carried to its logical conclusion, more facilities of locomotion of every kind, including workmen's trains, were most urgently needed in all directions, in order to prevent the growing up of overcrowded cities of artisans in one or two districts like Walthamstow and Edmonton. He thought their better provision in those quarters than in any others had led to an unequal distribution of population. They wanted the same facilities all round, so that the population might spread equally. He believed the Society would be glad to do what it could in the direction of assisting in the solution of the great traffic problem of London.

FIVE YEARS' EXPERIENCE *of the EFFECT of the WORKMEN'S*  
 COMPENSATION ACTS, *with ESPECIAL REFERENCE to SCHEMES*  
 CERTIFIED THEREUNDER. *By WILLIAM H. TOZER.*

[Read before the Royal Statistical Society, 19th April, 1904.  
 MAJOR PATRICK GEORGE CRAIGIE, C.B., President, in the Chair.]

THE first point to be considered with respect to the Workmen's Compensation Acts, is the limitation of their operation to certain specified employments. By the Act of 1897, which came into operation on 1st July, 1898, six groups of industries were brought within its provisions, viz., railways, factories, mines, quarries, engineering work (this term would appear to apply to *civil* rather than to *mechanical* engineering), and employment on, in, or about any building which exceeds 30 feet in height, and is being constructed or repaired by means of a scaffolding, or being demolished. . . . . The Act of 1900 extended the benefits of the previous Act to workmen engaged in agriculture. Although many important industries and occupations, among which may be mentioned those of seamen, fishermen, shop assistants, and persons engaged in domestic service, are not included in the operations of the Acts, those which are included comprise a large portion of the working population whose vocations render them especially liable to accidents.

Previous to the year 1881, a workman injured in the course of his employment could bring an action against his employer only under the common law. The principles from which the Common Law liability is deducible may be enunciated as follows: (1) "A person guilty of negligence is liable to make compensation for pecuniary damage resulting therefrom if the damage is legally traceable to the negligence." (2) "A master is responsible" (subject to a like qualification) "for the negligence of his servants whilst performing his work and acting within the general scope of their authority."<sup>1</sup> In cases of injury by a fellow workman, the law interposed the doctrine of "common employment," by which a workman was held to have taken upon himself the risk that he might be injured by a fellow workman. It was necessary, therefore, in order to recover compensation for injuries, to prove that the employer himself was to blame for the injuries sustained. The prospect of success to a workman in an

<sup>1</sup> Ruegg's "Treatise upon the Employers' Liability Act." 

action at common law was thus much restricted; and so many cases of injustice were traced to the doctrine of common employment, that in 1880 it was abolished by the Employers' Liability Act of that year. The difficulty in the way of the injured workman, arising from the question of contributory negligence, however, remained until the Act of 1897 was passed, and is indeed still felt in the case of occupations to which the Workmen's Compensation Acts do not apply. The Departmental Committee recently appointed by the Home Secretary to inquire into the operation of these Acts may possibly recommend their extension to other industries, and also the removal of some of the limitations which have given rise to perplexity and to litigation, *e.g.*, the provisions as to buildings exceeding 30 feet in height.

Section 1 of the principal Act provides that "If in any employment to which this Act applies personal injury by accident arising out of and in the course of the employment is caused to a workman, his employer shall . . . . . be liable to pay compensation in accordance with the first schedule to this Act." This liability is, however, qualified by the provisions of Section 2 in two material respects, (1) that "the employer shall not be liable under this Act in respect of any injury which does not disable the workman for a period of at least two weeks from earning full wages at the work at which he was employed; and (2) by the last sub-section of this section of the Act, "if it is proved that the injury to a workman is attributable to the serious and wilful misconduct of that workman, any compensation claimed in respect of that injury shall be disallowed."

The scale and conditions of compensation provided by the first schedule may be briefly summarised as follows:—(a.) Where death results from injury, and the workman leaves any dependants wholly dependent upon his earnings at the time of his death, a sum equal to his earnings in the employment of the same employer during the three years next preceding the injury, or the sum of 150*l.*, whichever of those sums is the larger, but not exceeding in any case 300*l.* . . . . . If the workman does not leave any such dependants, but leaves any dependants in part dependent upon his earnings at the time of his death, such sum, not exceeding in any case the amount payable under the foregoing provisions, as may be agreed upon. If he leaves no dependants, the reasonable expenses of his medical attendance and burial, not exceeding 10*l.* (b.) Where total or partial incapacity for work results from the injury, a weekly payment, after the second week, not exceeding 50 per cent. of his average weekly earnings during the previous twelve months, if he has been so long employed . . . . . such weekly payments not to exceed 1*l.*

Further provisions are made in respect to fixing the amount of the weekly payment, while paragraph 12 provides that any weekly payment may be reviewed at the request either of the employer or of the workman, and, on such review, may be ended, diminished, or increased. . . . .

The next paragraph of the schedule provides that where any weekly payment has been continued for not less than six months, the liability therefor may, on the application by, or on behalf of, the employer, be redeemed by the payment of a lump sum to be settled, in default of agreement, by arbitration under the Act. . . . .

These, in brief, are the benefits absolutely assured to the injured workman, and they may be varied only by the provisions of a certified scheme which the Act expressly requires shall, on the whole, be not less favourable to the general body of the workmen and their dependants than the provisions of the Act itself.

The Act having fixed the liability to compensate the injured workman upon the employer, unless, as already mentioned, such injury is attributable to the serious and wilful misconduct of the workman himself, how is such compensation to be obtained? The Act provides two courses, agreement or arbitration. The majority of cases have been settled by the former method. No official information in regard to them is, however, available except as to cases in which memoranda of agreements and informal arbitrations have been registered in the county courts, which represent a very small portion of the actual number of cases of compensation. The information which could be given by insurance companies, through whom many employers re-insure their risks under the Act, would, no doubt, be of great value, but it is not accessible.

The frequent resort to arbitration, in which is included all legal proceedings in the county courts (in Scotland the sheriffs' courts) and the many appeals to appellate courts, has obtained for the Act a reputation of being more fruitful in litigation than Acts of Parliament in general are, and an enactment legislating for the working classes of the community ought to be. The following case may serve as an illustration of the complexity of the issues arising under the Act:—

A firm of builders, having contracted to construct a house, sublet the plastering to a sub-contractor, to whom they supplied all materials. One of the sub-contractor's workmen, having met with an injury while at work, claimed compensation from the builders. They thereupon brought in the sub-contractor as a third party, claiming that he was liable to indemnify them. The county court judge made an award in favour of the workman, but declared that the builders were not entitled to be indemnified by the sub-contractor.



The builders appealed from this part of the award. The sub-contractor did not appear on the hearing of the appeal. The Court of Appeal allowed the appeal, with costs, holding that the sub-contractor, having undertaken a substantial part of the construction of the building, was himself an "undertaker," and was therefore liable to indemnify the builders.

As regards persons engaged in agriculture, the Act of 1900 makes it clear that "Where the contractor provides and uses "machinery driven by mechanical power for the purpose of "threshing, ploughing, or other agricultural work, he and he alone "shall be liable under this Act to pay compensation to any "workman employed by him on such work." It would have been well if a definite provision of this nature had been introduced into the Act of 1897.

Reference has been made to memoranda of agreements and informal arbitrations. These are authorised by the second schedule, which provides that "if any committee representative of an "employer and his workmen exists with power to settle matters under "this Act, the matter shall, unless either party objects . . . . . "be settled by the arbitration of such committee, or be referred by "them in their discretion to arbitration as herein provided;" or if either party objects, or there is no such committee . . . . . the matter shall be settled by a single arbitrator agreed on by the parties, or in the absence of agreement by the county court judge, or by a single arbitrator appointed by the county court judge . . . . . The Act also provides that where the amount of compensation shall have been ascertained, or any weekly payment varied, or any other matter decided under the Act, either by a committee or by an arbitrator, or by agreement, a memorandum thereof shall be sent . . . . . to the registrar of the county court, who shall . . . . . record such memorandum in a special book, without fee, and thereupon the said memorandum shall for all purposes be enforceable as a county court judgment . . . . .

The total number of Memoranda so registered from the commencement of the Act to 31st December, 1902, exceeded 6,400, including cases in which the amount of compensation was reviewed, &c. Of these 6,198 were settlements by agreement, and the remainder by informal arbitrations, as shown by the following table:—

**TABLE I.—Memoranda Registered in County Courts under Schedule II of the Workmen's Compensation Acts in Great Britain and Ireland between 1st July, 1898, and 31st December, 1902, deduced from the Home Office Statistics of Proceedings under those Acts, arranged according to Employment.**

Nature of Employment.	Total Number of Cases.	How Settled.			Amount of Compensation.			
		By Agreement.	By Committee.	By Agreed Arbitrator.	Lump Sums.		Weekly Payments.	
					Number of Cases.	Total Amount.	Number of Cases.	Total Weekly Amount.
						£		£
Railway .....	567	559	1	7	164	19,725	374	215
Factory .....	3,012	2,968	2	42	840	61,397	2,006	1,329
Mine .....	2,202	2,058	185	9	460	47,282	1,697	1,137
Quarry .....	80	77	—	3	13	600	64	41
Engineering work .....	258	242	—	16	90	8,731	154	101
Building .....	188	184	—	4	68	4,319	102	70
Agriculture .....	112	110	—	2	92	2,274	19	7
<b>Total .....</b>	<b>6,419</b>	<b>6,198</b>	<b>138</b>	<b>83</b>	<b>1,727</b>	<b>144,328</b>	<b>4,415</b>	<b>2,900</b>

In the following table, cases of death are distinguished from those of incapacity:—

**TABLE II.**

Result of Injury.	Total Number of Cases.	How Settled.			Amount of Compensation.			
		By Agreement.	By Committee.	By Agreed Arbitrator.	Lump Sums.		Weekly Payments.	
					Number of Cases.	Total Amount.	Number of Cases.	Total Weekly Amount.
						£		£
Death, leaving dependants ...	520	476	7	37	507	86,314	—	—
Death, leaving no dependants }	26	22	4	—	26	1,136	—	—
Incapacity .....	5,873	5,700	127	46	1,194	56,878	4,415	2,900
<b>Total (as above)</b>	<b>6,419</b>	<b>6,198</b>	<b>138</b>	<b>83</b>	<b>1,727</b>	<b>144,328</b>	<b>4,415</b>	<b>2,900</b>

During the five and a half years ending 31st December, 1902, it appears that the total number of Arbitrations in the county and sheriffs' courts of Great Britain and Ireland numbered 8,563, of which 5,648 were heard by the judge (or in Scotland by the

sheriff), 154 by arbitrators appointed by the judge, and 304 settled by acceptance of money paid into court. These numbers include applications in respect to weekly allowances already granted in which lump sums were awarded in redemption of the weekly payments, or the weekly payments were increased, diminished or terminated; 2,457 cases were otherwise disposed of, apparently by the parties coming to terms.

Of the 5,483 claims for compensation decided by the county (or sheriffs') courts, 4,265, or 78 per cent., were in favour of the applicant, and 1,218, or 22 per cent., for the respondent. In 1,778 cases lump sum payments, amounting in the aggregate to 234,565*l.*, were awarded; and 2,487 applicants were awarded weekly payments amounting in the aggregate to 1,340*l.* The periods for which these weekly payments were to be made are not ascertainable, but the amounts varied from one penny, and three half pence, per week, to the prescribed maximum of 1*l.* per week. The smaller amounts were not probably intended as adequate compensation for injury sustained, however slight that injury may have been, so much as to preserve the right to compensation should a development of the injury justify a reviewal of the case. In 2,922 cases solicitors' costs amounting to 29,703*l.* were allowed.

TABLE III.—*Arbitrations in County Courts under the Workmen's Compensation Acts in Great Britain and Ireland between 1st July, 1898, and 31st December, 1902, deduced from the Home Office Statistics of Proceedings under those Acts, arranged according to Employment.*

Nature of Employment.	Number of Claims Settled.	Result.		Amount of Compensation Awarded.			
		For Applicant.	For Respondent.	Lump Sums.		Weekly Payments.	
				Number of Cases.	Total Amount.	Number of Cases.	Total Weekly Amount.
					£		£
Railway .....	530	448	82	306	46,623	142	73
Factory .....	2,594	1,988	606	638	73,945	1,350	677
Mine .....	1,068	883	200	475	68,885	408	243
Quarry .....	172	133	39	52	7,394	81	38
Engineering work .....	895	315	80	123	16,062	192	106
Building .....	618	431	187	158	19,657	273	187
Agriculture .....	91	67	24	26	1,999	41	16
Total .....	5,483	4,265	1,218	1,778	234,565	2,487	1,340

In the following table, cases of death are distinguished from those of incapacity :—

TABLE IV.

Result of Injury.	Number of Claims Settled.	Result.		Amount of Compensation Awarded.			
		For Applicant.	For Respondent.	Lump Sums.		Weekly Payments.	
				Number of Cases.	Total Amount.	Number of Cases.	Total Weekly Amount.
					£		£
Death, leaving dependants.....	1,582	1,291	291	1,291	219,504	—	—
Death, leaving no dependants.....	16	10	6	10	81	—	—
Total incapacity.....	1,741	1,378	363	159	7,201	1,219	698
Partial „.....	2,144	1,586	558	318	7,779	1,268	642
Total .....	5,483	4,265	1,218	1,778	234,565	2,487	1,340

It appears from this table that the average amount awarded on the death of a workman leaving dependants was 170*l.*, or slightly in excess of the minimum amount provided by the Statute. In cases of injury resulting in total incapacity the amount was 45*3l.* and in those of partial incapacity only, 24*46l.* was awarded in each case, while the amount of the weekly payment may be taken, approximately, at 11*s.* per week.

Reference has been made to the frequent resort to litigation under the Act, and the following table shows the percentage of claims settled in favour of the applicant and respondent respectively comprised in the two preceding tables, based upon the number of claims by each occupation; the total number in each country being: England and Wales, 4,332; Scotland, 792; and Ireland, 359:—

TABLE V.

Occupation.	England and Wales.		Scotland.		Ireland.		Great Britain and Ireland.	
	For Applicant.	For Respondent.	For Applicant.	For Respondent.	For Applicant.	For Respondent.	For Applicant.	For Respondent.
Railway .....	87·90	12·10	70·37	29·63	75·00	25·00	84·53	15·47
Factory .....	79·20	20·80	63·37	36·63	70·10	29·90	76·64	23·36
Mine .....	84·95	15·05	68·18	31·82	83·83	16·67	81·53	18·47
Quarry .....	79·56	20·44	81·25	18·75	57·89	42·11	77·33	22·67
Engineering work ....	82·41	17·59	66·25	33·75	92·00	8·00	79·75	20·25
Building .....	75·63	24·37	47·06	52·94	54·39	45·61	69·74	30·26
Agriculture.....	81·25	18·75	57·14	42·86	55·00	45·00	73·63	26·37
For all occupations	81·05	18·95	64·27	35·73	68·25	31·75	77·79	22·21

The workmen in England and Wales thus succeeded in sustaining a higher percentage of their cases in the county courts than those engaged in other parts of the kingdom, and of these railway employees, with close upon 88 per cent. of successes, head the list although the other employments follow very closely. The workmen engaged in engineering work in Ireland gained the remarkably high percentage of 92 cases.

In 397 cases, or 7·24 per cent. of the total number of arbitrations decided by County Court Judges, appeals were made to the Courts of Appeal; 41 per cent. being by workmen or their dependants, and 59 per cent. by the employers. Of appeals by workmen 26·4 per cent. were successful, and of appeals by employers 35 per cent. Of nine cases carried from the Court of Appeal to the House of Lords, in which the decisions have been reported, seven appeals were made by workmen or their dependants, and in six cases the decisions of the Court of Appeal were reversed. The employers did not succeed in either of their appeals. No appeals to the House of Lords were made from Scotland or Ireland.

(1.) In the case of *Davies v. the Main Colliery Company*, the County Court Judge held that the father of the deceased workman was a dependant upon his son. The employer appealed to the Court of Appeal, and to the House of Lords, and was unsuccessful in both courts.

(2.) In the case of *Powell v. the Main Colliery Company*, the County Court Judge held that a claim was in time if it was made on the employer within six months of the accident, even though proceedings to enforce it were not commenced until after the six months. The employer appealed to the Court of Appeal, and was successful; but the workman appealed to the House of Lords, and that House restored the decision of the County Court Judge.

(3.) In the case of *Hoddinott v. Newton Chambers and Co.*, the County Court Judge held that a structural addition to a building already complete, was construction within the meaning of the Act. The employer appealed to the Court of Appeal, and was successful, but the claimant appealed to the House of Lords, and that House restored the decision of the County Court Judge, though Lord Shand and Lord Lindley dissented.

(4) and (5.) In the case of *Lyson v. Knowles and Sons*, and in a similar case of *Stuart v. Nixon and Bruce*, the County Court Judge held that the claimant was entitled to compensation based on the average weekly earnings, even though the employment had lasted less than two weeks. The employers appealed to the Court of Appeal, and were successful, but the claimants appealed to the

House of Lords, and that House restored the decision of the County Court Judge, though Lord Lindley dissented.

(6.) In the case of *Raine v. Jobson and Co.*, the County Court Judge and the Court of Appeal held that the dependants upon a person employed in repairing a ship in a dock were not entitled to compensation, although they would have been so entitled if he had been employed in the dock and not upon a ship, the dock being a factory within the meaning of the Act. The widow appealed to the House of Lords, and that House reversed the decision of both courts.

(7.) In the case of *Wrigley v. Whittaker and Sons*, the County Court Judge held that the dependants of a workman sent by his employers to work in a factory which was not theirs, would not be entitled to recover compensation for an injury received in that other factory. The Court of Appeal and the House of Lords confirmed the decision of the County Court Judge.

(8.) In the case of *Southern v. the Abram Coal Company*, the County Court Judge held that a workman was entitled to compensation on his average gross earnings before certain deductions the employers were entitled to make had been made. The employers appealed to the Court of Appeal and to the House of Lords, and were unsuccessful in both courts.

(9.) In the case of *Fenton v. Thorley & Co.*, the County Court Judge and the Court of Appeal both held that a rupture caused by an act of over exertion was not an accident entitling the workman to compensation. The workman appealed to the House of Lords, and that House reversed the decision of both courts.

The decisions in these cases from their commencement in the County Courts to their final settlement by the House of Lords may be shown thus :—

	County Court.		Court of Appeal.		House of Lords.	
	Decision in Favour of		Decision in Favour of		Decision in Favour of	
	Workmen (or Dependants).	Employer.	Workmen (or Dependants).	Employer.	Workmen (or Dependants).	Employer.
1 .....	1	—	1	—	1	—
2 .....	1	—	—	1	1	—
3 .....	1	—	—	1	1	—
4 .....	1	—	—	1	1	—
5 .....	1	—	—	1	1	—
6 .....	—	1	—	1	1	—
7 .....	—	1	—	1	—	1
8 .....	1	—	1	—	1	—
9 .....	—	1	—	1	1	—
	6	3	2	7	8	1

*Certified Schemes.*

Hitherto only those portions of the Act have been referred to under which questions of compensation have been settled either by litigation or compromise. It is now proposed to consider the subject of certified schemes under Section 3 of the Act. That section provides, by Sub-section 1 :—"If the Registrar of Friendly Societies, after taking steps to ascertain the views of the employer and workmen, certifies that any scheme of compensation, benefit or insurance for the workmen of an employer in any employment, whether or not such scheme includes other employers and their workmen, is, on the whole, not less favourable to the general body of workmen and their dependants than the provisions of this Act, the employer may, until the certificate is revoked, contract with any of those workmen that the provisions of the scheme shall be substituted for the provisions of this Act, and thereupon the employer shall be liable only in accordance with the scheme, but, save as aforesaid, this Act shall apply notwithstanding any contract to the contrary made after the commencement of this Act." Sub-section 3 imposes the condition that no scheme shall be so certified which contains an obligation upon the workmen to join the scheme as a condition of their hiring.

The following observations of the late Chief Registrar of Friendly Societies set forth the manner in which the above requirements of the Act are met. In his work on "Provident Societies and Industrial Welfare," Mr. Brabrook observes :—"Where employers and workmen are willing to join in a scheme for their mutual benefit, and such scheme can be shown to be, on the whole, not less favourable to the workmen than the Act would be, the employer may contract with any of his workmen that the provisions of the scheme are to be substituted for the provisions of the Act. Where such schemes depend upon a joint contribution of the master and the men, it has to be shown that the contribution of the master is as great as he would have to make under the Act, and that the benefits the workman is to derive from the master's contribution are equivalent to those he would derive under the Act. For example, where the same benefits as those of the Act are granted, and in addition the first two weeks' inability to labour is provided for, it must be shown that the contribution of the master covers the former, and that of the workman does not exceed the latter. It is competent, however, for masters and workmen to agree that other benefits shall be substituted for those of the Act, as, for example, a general system of life assurance for the assurance against death by accident, a general system of sick pay for the provision against disablement by accident, or a system of pensions,

or of medical relief for the benefits of the Act generally. In such case it has to be shown that the benefits provided out of the employers' contribution are equivalent to those of the Act, and that the workmen's contribution is not more than is necessary to provide the other benefits."

"Under the provisions of the statute it will be competent for the employers and workmen to continue (at any rate with some modification) schemes that have been in beneficial operation for many years. It is not to be supposed that the relations between employers and employed are relations of chronic hostility. They have their diverging interests, as all persons who have dealings together must necessarily have, but they have a common interest, which is often stronger than the tendencies to divergence. Where these common interests lead them to join in arrangements by which the workmen and employers contribute together to a provident fund the results have been excellent, in the establishment of mutual confidence and good feeling between them. This has been shown to a marked extent by unanimous applications on the part of the workmen in certain industries for certificates to schemes in which the benefits provided have been shown upon inquiry not to be equal to those of the Act, and the contribution of the employers not to be equal to that of the workmen. They have felt that the indirect advantages of maintaining the existing amicable relations and avoiding litigation were so great that they would have been glad to continue the existing provisions, and waive the advantages they might derive from the Act. This is obviously not practicable, and when the necessity of increasing their contributions to the joint fund has been pointed out to the employers, it has been cheerfully accepted—a circumstance that leads to the hope and confident expectation that the provision for contracting out may tend greatly to promote industrial peace and welfare."

How far these expectations have been realised is apparent from the result of the five years' working of the schemes, as shown in Table VII. Litigation has been almost unknown. Out of an income of 557,721*l.*, only 1*s.* per 100*l.* has been expended in law costs—remarkable testimony to the earnestness of both employer and workmen in maintaining that kindly relationship which it is so desirable should subsist between them.

Certificates have been granted under Section 3 of the Act of 1897, by the Registrars of Friendly Societies, to seventy-eight schemes in England and Wales, and to two in Scotland. These schemes are representative of four of the seven groups of industries coming within the provisions of the Acts. No schemes have been certified in Ireland. Of those established in England and Wales, twenty-three



schemes during the first year of existence transferred the management of their affairs to the certified scheme of the Monmouthshire and South Wales Miners Permanent Provident Society, which thus became a central organisation embracing a large portion of the mining industry of that part of the country. In one instance only, of the whole number of schemes sanctioned, has the result been abortive; and in this case, after the necessary measures had been taken to ascertain the views of the employer and of the workmen and the requirements of the Act had been complied with, the workmen, exercising the option still open to them, decided not to come under the scheme, but to pursue their employment under the scale of compensation provided by the Act itself, should accident overtake them. In two cases where operations had commenced the schemes came to a premature conclusion: in the one by notice from the employer to the workmen, while in the other the funds in hand were equally divided between the employer and the workmen. In another case, that of a sugar refinery, the factory was partially closed, and the scheme allowed to remain in abeyance. The certificate was, however, upon application being made, renewed at the close of last year. It may be interesting to note that these schemes ceased during the third year of their existence, and in the group of factories. A striking instance, showing the possibilities of certified schemes, is afforded by a scheme recently certified by the Registrar. The persons employed include travellers, salesmen, clerks, porters and messengers, and the payments on death range from 100*l.* to 1,000*l.* The allowance during incapacity is from 15*s.* to 6*l.* per week for fifty-two weeks. This is allowed from the date of injury, and is in some cases quite equivalent to the usual weekly earnings. The allowance is made whether the accident occurs during the hours of employment or in the employee's leisure time, and extends (for twenty-six weeks) to cases of infectious disease. The employer pays one-half of the premium for insurance, the risks being re-insured through an insurance company.

Up to the 30th June, 1903, schemes had been certified and had come into operation in connection with the following industries: railways two, factories twenty-four, mines twenty-seven, and quarries two, besides one in connection with the Admiralty and War Office departments. The aggregate number of workmen employed during the five years, 1899-1903 (exclusive of the Government scheme), was 636,586, of whom 615,895, or nearly 97 per cent., joined the schemes (see Table VIII), notwithstanding that it is an express provision of the Act that "no scheme shall be certified which contains an obligation upon the workmen to join the scheme as a condition of their hiring." It would therefore appear

that bearing in mind the entirely voluntary nature of their membership, the workmen in these employments had confidence in the schemes offered for their acceptance, and were prepared to give a fair trial to those provisions of the Act which encouraged the formation of such associations as those now under consideration, and having for their object the mutual benefit of employers and workmen.

The two schemes in connection with railways have been adopted by 40,056 workmen, who during five years contributed in the aggregate 46,824*l.* The employers' contributions during the same period amounted to 90,265*l.*

Twenty-four schemes in connection with factories have been adopted by 22,601 workmen, who contributed 15,624*l.*, and the employers 31,393*l.*

Twenty-seven schemes in connection with mines have been adopted by 65,460 workmen, who contributed 151,585*l.*, and the employers 206,406*l.*

Two schemes in connection with quarries have been adopted by 1,218 workmen, who contributed 603*l.*, and the employers 981*l.*

The average contributions of the workmen, taking for this purpose the total amount of their contributions divided by the annual average of the number of workmen contracting out, are as follows:—

Group I, railways, 1*d.* per week; Group II, factories, under 1*d.* per week; Group III, mines, 2*d.* per week; and Group IV, quarries, rather more than 1*d.* per week. The average for all groups being 7*s.* 2*d.* per annum, or slightly over 1½*d.* per week.

TABLE VI.

	Percentage to Total Receipts.		
	Workmen's Contributions.	Employers' Contributions.	Other Receipts.
I. Railway .....	34·16	65·84	—
II. Factory .....	32·28	64·86	2·86
III. Mine .....	40·90	55·69	3·41
IV. Quarry .....	37·48	60·97	1·55
All groups .....	38·48	59·00	2·52

Under six schemes no contributions are payable by the workmen, the employers having undertaken to provide the whole of the funds required to carry out the objects; five of the schemes being in Group II and one in Group III.

*Deaths and Incapacity resulting from Injury.*

In Group I the number of deaths resulting from injury during the quinquennium was 234. Of these 28 left no dependants, and payments amounting to 3,979*l.* were made. In the remaining 206 cases 661 dependants, including 140 widows, received the sum of 34,222*l.* during the period; in certain of these cases annuities are still payable. 23,658 cases of incapacity occurred, lasting, previous to the 30th June, 1903, 89,760 weeks (in 10,988 cases, lasting 15,055 weeks, the duration did not exceed two weeks). Weekly payments amounting in the aggregate to 85,865*l.* were made, besides lump sum payments of 10,768*l.*

In Group II the number of deaths was 51. In 41 of these, 101 dependants (of whom 34 were widows) were left. The total payments amounted to 5,320*l.*, besides pensions which are still payable. The cases of incapacity numbered 8,864, lasting 31,134 weeks (of these 4,197 cases lasted in the aggregate 5,490 weeks, the incapacity being of two weeks and under). The total weekly payments amounted to 20,133*l.*, besides lump sum payments of 2,490*l.*

In Group III the number of deaths was 482. In 320 of these 909 dependants (of whom 280 were widows) were left. The total payments in these cases amounted to 28,795*l.*, besides pensions which are still payable. The cases of incapacity numbered 61,012, lasting 247,779 weeks (of which 32,946 cases lasted in the aggregate 45,952 weeks, the incapacity being of two weeks and under). The total weekly payments amounted to 128,731*l.*, and lump sum payments to 7,860*l.*

In Group IV two deaths resulted from injury; in one case a widow was left, and instalment payments amounting to 14*l.* were made during the year 1903, in which year the death occurred. The sum of 13*l.* was paid in respect of the death of the workman leaving no dependants. The cases of incapacity numbered 461, lasting 1,312 weeks (of these 301 cases lasted 365 weeks, the incapacity being of two weeks and under). The total weekly payments amounted to 608*l.* Lump sum payments amounting to 75*l.* were also made. (See Tables VII and VIII.)

Taking the aggregate number of workmen who came under the schemes, the number of fatal accidents and duration of incapacity are as follows :—

	Per 1,000 Workmen.		
	Deaths.	Cases of Incapacity.	Duration of Incapacity.
			Weeks. Days.
Group I.—Railways .....	1.168	118.125	3 5
" II.—Factories .....	0.485	84.358	3 3
" III.—Mines .....	1.563	197.829	4 —
" IV.—Quarries .....	0.938	216.229	2 5

The average payment to incapacitated workmen being :—

	s.	d.		s.	d.
Group I.....	19	1'6	per week	Group III.....	10 4'7 per week
" II.....	12	11'2	"	" IV.....	9 3'2 "

In 30 returns information is given by which a comparison may be made between the estimated *maximum* amount that would have been payable under the Act and the actual amount paid by these schemes, in respect to weekly payments in cases of incapacity which occurred during the period under consideration :—

	Maximum Amount Payable.	Amount Paid.
	£	£
Group I .....	10,639	27,182
" II .....	9,359	14,746
" III .....	24,526	36,093
	44,524	78,021

From this it appears that the actual payments exceeded the estimated maximum payable under the Act by 156 per cent., 58 per cent., and 47 per cent. respectively; or, taking the totals of the groups, by 75 per cent. This excess is, however, largely accounted for by the payments in respect of the first two weeks of incapacity. When allowance is made for these, it would appear that the benefits received under the schemes are well within the requirements of the statute, although, in the absence of complete information, it would probably not be desirable to attempt any minute comparisons.

The questions naturally arise—Do the workmen receive an adequate return for their contributions? and Are the schemes generally more favourable to them than the benefits conferred by the Act? As regards the former, the following Dr. and Cr. accounts may convey the best answer :—

## WORKMEN'S ACCOUNT.

	£		£
Incapacity lasting two weeks and under .....	91,616	Contributions .....	214,686
Deaths from natural causes .....	3,711	Interest on investments .....	11,884
Other benefits .....	22,351	Other receipts .....	2,206
" payments .....	6,599		
Management expenses .....	25,046		
Balance .....	79,853		
	<u>228,676</u>		<u>228,676</u>

## EMPLOYERS' ACCOUNT.

	£		£
Incapacity after the first two weeks .....	143,721	Contributions .....	329,045
Lump sum payments .....	21,193		
Deaths from injury .....	72,343		
Medical aid .....	15,653		
Subscriptions to hospitals .....	2,337		
Law costs .....	278		
Payments to assurance companies .....	2,467		
Repayment of share of funds .....	66		
Balance .....	70,987		
	<u>329,045</u>		<u>329,045</u>

## LIABILITIES AND ASSETS ACCOUNT.

	£		£
To balance of workmen's account .....	79,853	By investments in Government securities .....	13,723
To balance of employers' account .....	70,987	By investments in Corporation stocks .....	26,648
Surplus .....	22,068	By investments in Railway stocks .....	89,505
		Other investments .....	4,587
		Cash at bank and in hand .....	37,945
	<u>172,408</u>		<u>172,408</u>

It may perhaps be desirable to more fully explain the nature of two items in the workmen's account—"other benefits" and "other payments." As has already been observed, under the provisions of the statute it is competent for the employer and workmen to continue schemes that were in operation in connection with their employments at the passing of the Act; and 25 such schemes transferred funds amounting to 22,068*l.*—the surplus balance shown

above—to the certified schemes. 18 schemes, in addition to being certified under the Workmen's Compensation Acts, are also registered under the Friendly Societies Act, thus considerably enlarging the scope of their operations. Under the head of "other benefits," therefore, has been placed expenditure on account of benefits which became payable to the dependants of deceased workmen previous to the certified schemes, and of payments for incapacity likewise previously incurred, old age pensions to employés, and other expenditure which tended to the comfort of the injured workmen or the dependants of those who had lost their lives. "Other payments" includes premiums paid to assurance companies, and other items of general, rather than of individual advantage.

It will be observed that the whole of the interest accruing on investments during the five years the schemes have been in operation has been credited to the workmen's account. On the other hand, the expenses of management have been charged to their account also. The proportions of these two items, which might properly be shown in the respective accounts, being quite unascertainable, the present method, which is probably more favourable to the workmen than to the employer, has been adopted. It is also worthy of note in this respect, that in several instances the whole of the management expenses incidental to the schemes has been borne by the employers, otherwise that item would have been considerably increased in the above account. The balances shown in the above accounts may be considered as reserves for future contingencies, while the employers' account is also subject to liabilities existing at 30th June, 1903, in respect to incompleated payments in cases of incapacity, and for the payment of pensions, &c., to the widows and other dependants of deceased workmen.

Mention may perhaps be made that under one scheme in connection with a colliery, in addition to the money payments, not only is rent paid for widows, but coal is provided for the domestic hearth. In another case the mutuality existing between the employers and the workmen is such that when fines are inflicted upon the latter for infringement of the regulations, the employers permit themselves to be penalised to an equivalent amount.

The management of the schemes also affords further opportunities of bringing the employer and workmen into frequent conference, and by interchange of opinions and consideration of the many matters which necessarily come before them (often of a nature to arouse their sympathies), tend to a better understanding and appreciation of the merits of both. The rules governing a scheme invariably provide for the formation of a committee of management composed of a specified number of representatives elected by the

different sections of workpeople in connection with the works together with the employer or his representative. As the name implies, to this committee and the necessary officers, trustees, treasurer, secretary, &c., the affairs of the scheme are entrusted. The rules usually also provide that the members of the committee shall retire at the annual general meeting; full power, therefore, rests in the hands of the general body of members to select fit persons to represent them. A combination of this nature, in which the trained business capacity of the employer is associated with the not less valuable common sense views of the workmen, and their close acquaintance with the circumstances of their fellow employees, practically ensures not merely an economical application of the funds, but a just administration of the schemes.

As might perhaps have been anticipated in a measure introducing such entirely new principles into British jurisprudence, the Workmen's Compensation Act of 1897 was strongly opposed on the ground that it would not only ruin many employers, but also seriously injure the industries of the country. These apprehensions do not appear to have been realised. By means of insurance companies employers re-insure their risks under the Act by the payment of a premium varying from 5s. to 2l. per cent. upon the amount of wages paid, according to the nature of the employment. Presumably this charge falls in the long run upon the consumer. It has been computed that the cost of compensation paid to miners in Northumberland and Durham does not exceed  $\frac{1}{2}d.$  per ton, whilst the cost for the United Kingdom is under  $\frac{3}{4}d.$  per ton, as against 3d. per ton which it was predicted would be the increased cost of coal arising from compensation under the Act.<sup>2</sup> The compensation paid under the Act to railway servants would appear to be under 10s. per 100l. of wages paid.<sup>3</sup> It is thought by some that the consequences of the Act will detrimentally affect the workman to a greater degree than the employer. Already we hear that men are considered too old for work at 45 years of age. Employers, realising the grave responsibility which rests upon them, even in the most favourable circumstances, are said to be more careful in the selection of workmen. But it is possible that to some extent the preference for younger men is unconnected with the Workmen's Compensation Act, and it is only part of a general tendency to prefer young blood in modern business industry.

It would be difficult, and perhaps unprofitable, to attempt to make any comparison between the pecuniary advantages of certified

<sup>2</sup> Dr. Oliver, "Dangerous Trades"

<sup>3</sup> Home Office Return (1902).

schemes with those gained by a resort to legal tribunals. Under the former the workman has the certainty of receiving benefits equal, at least, to those of the Act; and under the latter, in the absence of compromise with the employer, or an insurance company, the anxiety and uncertainty of possibly prolonged litigation. Whether in the future certified schemes will be more frequently sought than in the past, would appear to depend in a great measure upon the degree of mutuality subsisting between the employer and his workmen.

It appears from the particulars given in the foregoing pages that, during the five years the Act has been in operation, recorded payments have been made in respect to deaths from injury, and in cases of total incapacity, amounting to nearly half a million sterling, in addition to which annuities are still payable to dependants of deceased workmen. Weekly payments, amounting in the aggregate to over a quarter of a million sterling, have also been made in respect to minor injuries, besides allowances awarded for varying periods amounting to upwards of 4,000*l.* weekly, the aggregate value of which cannot be ascertained. But these amounts probably represent only a small portion of the actual benefits received under the Acts in unrecorded cases; no information being available as to sums paid as compensation through insurance companies, or of amounts paid by arrangement between employer and employed without the cognisance of the County Courts.

It is a fair inference from all that has been said that the Acts—alike in their ordinary operation, and in the alternative offered by what is called “contracting out”—have been eminently beneficial to the working classes.



TABLE VII.—*Workmen's Compensation Acts, 1897 and 1900. Summary of Receipts and Payments of Certified Schemes between 1st July, 1898, and 30th June, 1903.*

Nature of Employment.	Number of Schemes	Number of Returns Received.	Average Number of Workmen Contracting Out.	Receipts.				Payments.										Amount of Funds.	
				Contributions.			Total	On Death and to Dependents.	Incapacity.		Medi- cal Aid.	Other Re- bene- fits.	Sub- scrip- tions to Hos- pitals, &c.	Law Costs.	Other Pay- ments.	Ma- nage- ment Ex- penses.	Total		
				Work- men.	Em- ployers.	In- terest on In- vest- ments.			Weekly Pay- ments.	Lump Sum Pay- ments.									
																			From Natu- ral In- jury.
Group I. Railway	2	10	40,056	46,824	90,265	—	137,089	33,200	—	84,888	10,768	—	709	—	—	—	135,543	1,516	
" II. Factory	24	97	22,601	15,624	31,393	1,240	48,401	4,320	189	20,123	2,490	1,696	6,106	408	98	3,343	640	40,420	18,669
" III. Mine ...	27	124	65,460	151,585	206,406	10,569	370,622	28,796	3,510	128,720	7,860	13,775	15,463	1,900	180	5,577	94,289	230,079	166,102
" IV. Quarry	2	5	1,318	603	961	25	1,609	27	12	608	75	183	74	31	—	212	117	1,339	1,071
Total .....	55	236	129,335	214,696	329,045	11,834	557,721	72,343	9,711	235,337	21,193	15,653	22,851	2,337	278	9,132	25,046	407,881	172,408

TABLE VIII.—*Certified Schemes. Summary of Deaths from Injury and of Cases of Incapacity resulting from Accident between 1st July, 1898, and 30th June, 1903.*

Nature of Employment.	Aggregate Number of Workmen in the Employment.	Number who have Contracted Out under the Scheme.		Number of Workmen who Died from Injury.					
		Aggregate.	Average.	Leaving no Dependents.	Leaving Dependents.	Widows.	Children.	Parents.	(Others.
Group I. Rail-way .....	211,405	200,279	40,056	28	206	140	434	78	9
Group II. Factory ...	111,600	106,076	22,601	10	41	34	53	14	—
Group III. Mine .....	310,878	308,408	65,480	169	320	280	579	47	3
Group IV. Quarry ...	2,708	2,132	1,318	1	1	1	—	—	—
	636,586	615,895	129,335	201	568	455	1,066	139	12

Nature of Employment.	Amount Paid.		Incapacity lasting Two Weeks and under.					
	Where No Dependents are Left.	Where Dependents are Left.	Number of Cases.		Duration of Incapacity.		Amount Paid.	
			Continued from Previous Year.	Beginning during the Year.	Continued from Previous Year.	Beginning during the Year.	Incapacity Continued from Previous Year.	Incapacity Beginning during the Year.
	£	£			w. d.	w. d.	£	£
Group I. Rail-way .....	3,979	34,322	415	10,988	314 2	14,741 1	973	13,340
Group II. Factory ...	747	4,573	126	4,197	158 1	5,331 4	104	3,028
Group III. Mine .....	2,889	25,906	771	32,946	978 2	44,978 2	549	22,888
Group IV. Quarry ...	13	14	2	301	1 4	364 0	1	171
	7,628	64,715	1,314	48,432	1,452 3	65,410 1	927	39,427

Nature of Employment.	Total of Incapacity (including Two Weeks and under).						Estimated Maximum Amount Payable under the Act for Incapacity (where stated).
	Number of Cases.		Duration of Incapacity.		Amount Paid.		
	<i>Continued from Previous Year.</i>	<i>Beginning during the Year.</i>	<i>Continued from Previous Year.</i>	<i>Beginning during the Year.</i>	<i>Incapacity Continued from Previous Year.</i>	<i>Incapacity Beginning during the Year.</i>	
			w. d.	w. d.	£	£	£
Group I. Rail- way .....	1,013	23,668	8,283 5	81,476 1	9,987	75,878	10,639
Group II. Factory ...	371	8,864	3,324 1	27,809 3	2,223	17,911	9,359
Group III. Mine .....	2,636	61,012	39,137 5	208,641 5	19,022	109,709	24,526
Group IV. Quarry ...	7	461	19 0	1,222 5	9	590	—
	4,027	93,995	50,764 5	319,220 2	31,240	204,097	44,524

DISCUSSION *on* MR. W. H. TOZER'S PAPER.

THE PRESIDENT stated that since the last meeting the Council had received a reply to the application they had addressed to the Government, asking that a deputation should be received with regard to the holding of an intermediate census of the United Kingdom in the year 1906, restricted to particulars of number, sex, and age. This proposition was one which had been before the Society on many occasions, but the Council had never yet been successful in persuading any Government to introduce the necessary Bill for the purpose. The meeting would therefore be glad to learn that the President of the Local Government Board had now stated his readiness to receive a deputation if one were organised. He thought the Society ought to receive that announcement with some satisfaction. It was the intention of the Council to communicate with other bodies, and it was hoped that the deputation might be arranged for some date in the month of May. Sir Francis Sharp Powell, M.P., had undertaken to introduce the deputation, and he hoped those present would make known the matter with a view to making the deputation thoroughly representative of the interests of statistical science as well as of public health and local government.

The PRESIDENT said he unfortunately had now to leave the chair, but, before doing so, he wished to take the opportunity of expressing his thanks to Mr. Tozer for bringing this subject before the Society in so lucid a manner. He thought it was quite a proper subject for the Society to take up, so that they might discuss, after a sufficient interval, the results, so far as figures could express them, of a species of legislation which had been of a more or less experimental character. The figures given in the paper would reward their study, and would be, he was sure, very usefully discussed by such a gathering as was then present.

In response to his invitation, he was glad to say, the Chair would be occupied during the remainder of the meeting by their Vice-President, Mr. Brabrook, whose knowledge of the question before them was well recognised.

Mr. E. W. BRABROOK, C.B., Vice-President, then took the Chair.

Mr. ALFRED FOOT said he thought that Tables I, II, III, VII, and VIII would have been more valuable if the tabulation of results had been given year by year, and hoped the writer would be able to make that alteration in the *Journal*. The experience of several years was all lumped together, but he believed it would be found on an examination of the years individually, that the amount of compensation had shown a tendency to increase year by year, not

only in respect of non-fatal injuries, but also in respect of deaths. That was a matter requiring very careful thought by those who had to deal with this subject, because the tendency of claims to grow involved a very serious increasing liability upon the employers. He regarded the statement that with the advent of certified schemes litigation had almost disappeared as very remarkable; would it were so also in other directions! Unfortunately, the Workmen's Compensation Acts had been most fruitful in litigation for the reason that the liability involved had not been simply expressed. An Act that dealt so closely with the wellbeing of workmen and unfortunate widows, and the unfortunate children who might be left orphans, should have been so clearly expressed that he who ran might not only read, but thoroughly understand what was the compensation that would be awarded if, by accident, he should be injured in the course of his work. Litigation was unknown in the case of certified schemes simply because the obligation was so clearly expressed that there was nothing to litigate about. If the Government in their new Bill would only clearly express what it was they wished to make employers liable for, things would be on a very much more satisfactory footing than in the past. It was very evident that the sympathies of the writer were rather in favour of certified schemes, and he thought very properly so, because it was clear that workmen were very much more benefited under these schemes than under the Act itself. A remarkable instance of that had been given in the paper, where not only was an allowance made for disablement arising from accident, but also during certain diseases. He believed that that had worked very well. He happened to have had something to do with the arrangement of the scheme in question, and if employers would only recognise the opportunities for benefiting their workpeople afforded by such a scheme there would be a vast deal less litigation.

Mr. R. T. THOMSON said he was struck with two peculiar errors which Mr. Tozer had made in the commencement of his paper. First, the suggestion that mechanical engineers did not come under the Workmen's Compensation Act, and, a little further on, that the doctrine of common employment was abolished by the passing of the Employers' Liability Act of 1880. But passing from these two somewhat unimportant points, there was a great deal in the paper which afforded food for reflection. The first point which struck him as being of great interest was the remarkable result of the appeals to the House of Lords, reversing in favour of the workmen so many decisions of the Court of Appeal. He, as a layman, could only explain it on the supposition that the Court of Appeal interpreted the *letter*, and the House of Lords the *spirit* of the Act. Did not that, as a consequence, show a very unsatisfactory state of things with regard to the Workmen's Compensation Act? Even after five years one found appeals still made on various sections of the Act, and on such questions as what constituted "earnings," and how far a man was entitled to benefits for permanent incapacity, when he was still able to earn some money in

some kind of employment other than that in which he had met with his injury. Within the last few days the Court of Appeal had been occupied for a considerable time in again considering that very question, and in the case of *Walder v. Norman* and *Burt* they had laid down what must appear to most people to be an entirely new doctrine and an entirely new interpretation of the Act. Another appeal case which had a bearing upon the more prominent portion of Mr. Tozer's paper had reference to the question of claims for benefit under the Act, and in that case, *Taylor v. the Hamstead Colliery Company*, reported in the "*Labour Gazette*," it had been held that a person who had elected to take some benefits under the scheme adopted was debarred from making any claim subsequently under either the Workmen's Compensation Act or the Employers' Liability Act, 1880, in the case of death. Evidently there was great doubt about that, but the judges rightly held that inasmuch as an election had been made under the Workmen's Compensation Act to waive the rights, no claim could be made under the previous Act. He thought there could be no doubt that a great deal of litigation, from which employers as well as employed had suffered, had arisen from the fact that there had been these two Acts of Parliament running concurrently. Solicitors acting on behalf of trade unions had frequently—he might almost say invariably—made claims alternately under both Acts, and if the claim for compensation under the one Act failed, they had immediate recourse to a claim under the other Act. Employers, therefore, and insurance companies, as representing employers of labour, had in many cases been entirely at a loss to know under which Act to pay the compensation. The vast amount of litigation caused by that circumstance alone seemed to him to afford a strong argument for the abolition of the Employers' Liability Act, and in the event of a new Workmen's Compensation Act being agreed upon by Parliament, it was to be hoped that the amending Act would do away altogether with the other Acts, which only lent confusion to the issue. Another point which had struck him in the paper was the remarkably small number of bodies who had availed themselves of the option under the Workmen's Compensation Act, there being only two railway companies, twenty-four factories, twenty-seven mines, and two quarries. With regard to the working of the Act itself, and especially to the litigation which had arisen in consequence of it, one could not fail to notice that in very few cases the services of the official medical referee had been called in by the County Court Judge sitting as arbitrator. These gentlemen were appointed on account of their reputation and skill as assessors to assist the arbitrator in dealing with questions of injury and incapacity, but they had done so in remarkably few cases. When it had been suggested, either on behalf of the workman or of the employer, that the official medical referee should be called in to adjudicate, the arbitrator had generally said it was quite unnecessary, and that he would decide the point himself. One other point of difficulty in the administration of the Act was the difficulty of getting awards reviewed. For instance, a man might obtain an

award of half his weekly earnings during incapacity, that award being registered in the County Court. After a lengthy period the employer might at last suspect the man of malingering, and that he was able to do some work, and would therefore appeal to the Court for review of the case, but, as a rule, it was impossible to prove that the man was capable of earning anything, or very little, and the costs in case of failure had to be borne by the employer. In very few cases had the decisions been given in favour of the employer. The tendency all along had been to perpetuate the awards and cause the cases to become "permanent" in the books of the firm.

Mr. E. L. HARTLEY said that the first thing he would like to comment upon was the method of selection of the industries to which the Act applied. It was sometimes suggested that Parliament had selected the dangerous employments of the country for the operation of the Act. But it was obvious that the principle of selection had not been consistently carried out, since the most dangerous one—shipping—did not come within its scope. He could find no logical basis of selection for the industries falling under the Act, and believed they were selected not upon any general principle either of legislation or of political economy, but that the Act was applied simply to those industries which were sufficiently strongly represented by their Trades Unions to compel Parliament to attend to their claims. That was the only basis or theory of selection that he could suggest, and of course an Act framed in this illogical manner, which is the inevitable result of our present methods of legislation, cannot be expected to stand any test either from an economic or from a legal point of view, and must give infinite trouble to our courts of law in their attempts to construe it logically. Let them see how it worked from the economic point of view in a typical county like Lancashire, which was largely interested in the cotton trade, to which the Workmen's Compensation Act applied, and in agriculture, to which the Act did not originally apply.

The result of applying the Act to the cotton trade was that the cost of making cotton goods in Lancashire was increased by the cost of the compensation paid to those who were injured in life or limb while making cotton goods. From the economic point of view this was perfectly sound. It is sound economy that the price of every article should include the cost of all the human energy expended in its manufacture. But for a long time the agricultural industry was left outside the scope of the Act. Consequently when injuries were suffered by an agricultural labourer the burden of supporting that injured workman did not fall upon the agricultural industry exclusively, and so go to increase the cost of agricultural produce, but fell upon the public at large, including, among other trades, the cotton trade. Thus the price of making cottons was increased not only by the burden of compensating those injured in the cotton trade, but also by a contribution towards the burden of supporting those who had received injuries in those employments which did not fall within the Act. This was economically unsound, and the logical

course, clearly, was to apply the Compensation Act to all employments. This course, if adopted, would have got rid of an immense amount of litigation which had arisen from the question whether or not a particular occupation fell within the Act. The next point was as to the scale of compensation; and here again two conflicting principles were met with. The first principle was that a man should be indemnified for the loss which he had suffered, and that the scale of compensation ought to be based upon the difference between the average earnings of the man before the accident, and what he was able to earn after the accident. Along with that principle ran the conflicting one that the employer should not pay more than one-half of the average earnings of the man while employed by that employer during a certain period before the accident. That was introduced as a safeguard to the employer that the tax thrown upon him should not be unduly large. Reconciliation of these two principles seemed to him impossible, and much of the litigation over the Act had arisen from the language which attempted to harmonize these antagonistic principles. These faults in the draughtsmanship of the Act were the natural and inevitable result of the conflict between labour and capital in Parliament. He would like to make one further remark bearing upon the cost of the Act to the cotton trade. The manufacturers of North-East Lancashire had formed a mutual insurance scheme to insure their members for their liability under the Act. The contribution to the insurance fund was less than half the premium which the insurance companies demanded. Of this contribution less than half had been expended in compensation. In other words the burden thrown upon the trade has not been one quarter of what was anticipated. Thanks to the harmonious relations and mutual confidence between employers and employed, claims for compensation are almost invariably settled by the officials of the masters' and men's organisations, and litigation is almost unknown. The number of accidents had been reduced by the operation of the Act, as the master's secretary, with his expert local knowledge, devotes special attention to any factory in which accidents occur. So far as the cotton trade is concerned the Workmen's Compensation Act must be admitted to be an almost unqualified success.

Sir JOHN GLOVER said that it struck him that five years was far too short a time in which to come to any conclusions about the value of the new liability that had been created. They were told as one of the great reasons for these Acts that if the masters could only be made responsible for the pecuniary consequences of deaths and accidents, there would be a great reduction in accidents and in the deaths occurring from accidents in the course of employment. But he had not heard as the result of this effort to enlist the pecuniary interest of the employers on the side of safety that there had been any marked decrease in the number of accidents. He also understood that it was urged strongly on the legislature that if it would only consent to the Employers' Liability Acts and to the Workmen's Compensation Acts, the result of such statutory provisions would

soon be to bring about far better relations between master and servant and between employers and employed. But had that expectation been realised? Were strikes less frequent or labour disputes less acute? Then he found, he did not say as a consequence of what had been done in this matter, that in some foreign countries these liabilities on employers had become a positive source of tyranny. It was a common thing, especially in the United States, if one employed labour there, and a man was injured, that for a small injury one's vessel would be arrested for a number of thousand dollars, varying from four or five times the amount there was any likelihood of ever being called upon to pay. He did not say the law was frequently used in that way at home, but abroad it was frequently so used. It seemed to him that there was a great effort in this legislation to put an unnatural burden on the employers, and that that effort had frequently failed. An employer did not carry on his business for philanthropic reasons, but with the object of turning his twenty shillings into twenty shillings and threepence or into twenty shillings and sixpence, and whatever might be said about these fancy liabilities, of course according to the cost of what he produced they were charged to the consumer who bought the goods, so the net ultimate cost was a charge on the community and not on the employer. In that respect he would submit that the purpose of the Act had entirely failed. The employer shirked the unnatural responsibilities put on him by the legislature by insuring his liabilities. There was an extensive system of insurance against such things and a good deal of litigation. It had benefited the lawyers without doubt, and he should think it had also been beneficial to some insurance companies. As soon as one had insured, all idea of providing against the frequency of accident was gone, and the injured workman was left face to face with some underwriter, with whom he had to fight a lawsuit in order to get compensation. That state of things seemed to him to result from an original vice in this legislation, namely, the idea that it could possibly be right to put the whole burden of this compensation either on the employer or on the consumer. The man who was to have the benefit, and whose care could so often avoid accident, ought to have paid a considerable portion of the premium of insurance, but the master alone was punished. If the matter had been so arranged, he thought it would have been easy for employers and workmen to have entered into a joint contribution, and even with that joint contribution to have effected an insurance which would have put the burden where the benefit was going. The benefit was to the man, and the man who was going to receive a benefit should pay a large portion of its cost. Litigation had increased, strikes continued in great number, and although he thought it was too soon—five years—to say that these Acts were a failure, he must say that the sanguine expectations which were held out before the public when they were initiated had not yet been realised. He had a strong suspicion that had it not been that the working men who were to benefit had votes, and that votes were wanted by the political party which was chiefly responsible for these Acts, they would not have been passed in anything like such a form as we had them.



Mr. G. H. WOOD said that those who knew the industrial working classes intimately, at the time when the Workmen's Compensation Act was passed, would call to mind that the working classes feared it. First, because, in spite of the clause which insured that all schemes under the Act should give the workman equivalent benefits to those mentioned by the Act, the loophole left by the possibility of insuring, or contracting out, or agreeing to employers' schemes for insuring under the Act, would leave them worse off than they were already, or, at least, no better off; and, secondly, because of the limitations of the Act. He was glad to find satisfactorily set forth what had been actually experienced by workmen themselves and their leaders—that the benefits conferred by the Workmen's Compensation Act had been very large, without materially hampering industry. Undoubtedly there had been a very large amount of benefit. Even the existence of two Acts instead of one had been a benefit; for, if an employé had not been able to get compensation under the Workmen's Compensation Act, he, or his Union on his behalf, had been able to obtain it under the Employers' Liability Act. On the whole, workmen now regarded with favour an Act which, at its inception, they feared. This led him to urge that all injuries incident to industry should be provided for. As to the suggestion made by a previous speaker, that workmen should contribute towards a compensation fund, he did not think that they should, as they already paid the cost of industrial sickness. Take, for example, the risk run by workers in lead and brass of incurring disease which they had themselves to insure against by joining friendly societies. These injuries arising from the nature of various employments frequently kept the workman out of work for weeks together. Certainly, then, it was only fair that injuries arising from such causes as defective machinery should be compensated. Really, the wrong party paid at the present moment. An industry was surely not a thing carried on for the benefit of employer or employé, but for the benefit of the community. That being the case, the true line to go upon surely was to enlarge the Act, so as to compensate everybody for accidents which were purely industrial, and were incurred during the time of employment, the general charge being thrown upon the community. That seemed to him to be the next step that was wanted. He would submit that compensation should not be based so much upon a man's actual earnings during the previous twelve months, as upon a computation of his standard of life and average expenditure. Suppose a man had been out of work for twelve months, with the exception of a few days occasional employment, who was to say what his earnings had been, and how he was to be compensated? He might during the time have been living on his savings and trade-union out-of-work pay. In such a case, would it not be better to find out his average standard of life, and give compensation in accordance with it? If a boilermaker, for instance, had been living at the rate of two guineas a week in London, his compensation should be in some definite proportion to that rate, because he had been worth it to the community.

The CHAIRMAN (Mr. E. W. BRABROOK, C.B.) in closing the discussion, said he entirely agreed with the President that the paper was an able and original one, and related to a subject which was eminently worthy of being brought before the Society, as the range of discussion very clearly showed. One thing he admired in the paper was the admirable restraint Mr. Tozer had put upon himself; he had given no conjectural notions about the matter, but had based his conclusions entirely upon authentic statistics. Five years, as Sir John Glover had truly said, was a short time in which to test so great a revolution as this Act had created, but he thought, nevertheless, the time had come when such information as was available should be laid before, and considered by, the Society. The circumstance that at the present moment a Departmental Committee was sitting to consider in what way the Act required amendment, showed that this was a fitting time for consideration of this subject by the Society.

Mr. TOZER, in reply, said that with the time and space at his disposal he had been unable to more than touch the fringe of so large a question as the one under consideration. By the end of another quinquennium, however, with the increase of statistical material which would then have accrued, he hoped to be able to present a more complete story. Mr. Thomson had raised a point as to his restricted definition of engineering work. In reply to this he would remark that he had adopted the definition given in the Act itself, which defined "engineering work" as "work of construction, or alteration or repair of a railroad, harbour, dock, canal, or sewer, and includes any other work for the construction, alteration, or repair of which machinery . . . . . is used." But whatever may be the proper interpretation to be placed upon the words "any other work"—and upon this there appeared to be a difference of legal opinion—he did not intend to suggest, even in a remote degree, that mechanical engineers do not come under the Workmen's Compensation Acts.

In regard to Mr. Foot's request for tabular statements giving the results year by year, it would perhaps be well to bear in mind that the Acts are yet in their infancy: and some time, possibly years, will elapse before the rights conferred by them upon the workmen affected become common knowledge. Until it may, with some degree of certainty, be assumed that the workmen generally have that knowledge, it would probably lead to inaccurate inferences were the results of one year compared with those of another in Tables I to IV. As regards Tables VII and VIII the circumstances are different. Workmen coming under Certified Schemes are acquainted with the provisions of those schemes. In the Annual Reports to Parliament of the Chief Registrar of Friendly Societies particulars are given of the number of persons under the schemes, and the cases of incapacity and death; there would, therefore, probably be little advantage at the present time in giving more detailed information in the *Journal*.

## REPORT OF THE COUNCIL

*For the FINANCIAL YEAR ended 31st December, 1903, and for the  
SESSIONAL YEAR ending 21st June, 1904, presented at the  
SEVENTIETH ANNUAL GENERAL MEETING of the ROYAL  
STATISTICAL SOCIETY, held at the Society's Rooms, 9, Adelphi  
Terrace, Strand, W.C., London, on the 21st of June, 1904.*

THE Council have the honour to submit their Seventieth Annual Report.

The roll of Fellows on the 31st December last as compared with the average of the previous ten years was as follows :—

Particulars.	1903.	Average of the previous Ten Years.
Number of Fellows on 31st December .....	939	918
Life Members included in the above .....	174	179
Number lost by death, withdrawal, or default .....	49	54
New Fellows elected .....	56	47

Since the 1st January last, 22 new Fellows have been elected, and the Society has lost 21 by death, resignation, or default, so that the number on the list on June 16th was 940.

The Society has to deplore the deaths of the undermentioned Fellows since June last year :—

*Deaths of Fellows since June, 1903.*

		Date of Election.
<i>d</i>	Bramwell, Sir Frederick J., Bart., D.C.L., F.R.S.....	1888
	Bush, Baron William de, F.C.S. ....	1886
<i>d</i>	Coyne, William P., M.A. ....	1901
	Green, Joseph Shaw ....	1888
	Heap, George ....	1896
	Huth, Ferdinand M. ....	1890
	*Jones, Edwin, J.P. ....	1884
<i>c d</i>	*Kennett-Barrington, Sir V. Hunter, M.A., LL.M.....	1881
	Latham, Stanley A., A.C.A. ....	1892
	Malleson, Frank R. ....	1887
	*Maple, Sir John Blundell, Bart., M.P.....	1877
	*Meikle, James, F.I.A. ....	1853
	*Pease, Sir Joseph Whitwell, Bart., M.P. ....	1880
	Randell, James S.....	1885
	Rutherford-Elliot, J. G. ....	1873
	*Salisbury, the Most Hon. the Marquis of, K.G. ....	1873
	Salt, Sir Thomas, Bart. ....	1876
	Samuel, Charles ....	1892
	Tyndall, William Henry, F.I.A. ....	1841
	*Whitwell, Mark, J.P. ....	1879
	Wilkinson, Thomas Read ....	1875
<i>d</i>	*Wilson, Robert Porter ..	1874

*c* Indicates those who had served on the Council.

*d* Indicates those who had been Donors to the Library.

\* Indicates Life Members.

During the same period the following new Fellows have been elected :—

Avery, John.  
 Bamber, Lieut.-Col. Charles J.  
 Barton, Edwin.  
 Brownfoot, Harry Allison.  
 Channing, Francis Allston, M.P.  
 Chiozza-Money, Leo G.  
 Clark, Archibald Brown.  
 Cope, Rev. Robert Goodacre.  
 Crotch, William Walter.  
 Enthoven, Reginald Edward.  
 Fox, Matthew Joseph.  
 Fry, Thomas Hallett.  
 Gates, Chasemore Philip.  
 Ginsburg, Benedict W., LL.D.  
 Goldman, Leopold.  
 Gray, Robert Kaye.  
 Haig, Edric Wolseley.  
 Hamilton, Charles Joseph.  
 Hunt, Arthur Leonard.  
 Jack, Robert Robertson.  
 Lance, Charles Carey.  
 Lawson, Rev. Herbert J.  
 Lloyd, Godfrey I. H.

Macrosty, Henry W.  
 Mallet, Bernard.  
 Mayer, Dr. Clemens.  
 Mosely, Alfred, C.M.G.  
 Olmsted, Victor H.  
 Parker, Sir Gilbert, M.P.  
 Pilling, John Alfred.  
 Rathbone, Miss Eleanor F.  
 Ripon, Rt. Rev. the Lord Bishop of.  
 Routly, William H.  
 Runciman, W., M.P.  
 Sidwell, Henry Thomas.  
 Siemens, Alexander.  
 Spencer, Frederick H.  
 Tatham, Basil St. John.  
 Unstead, John Frederick.  
 Vaizey, Ker George Russell.  
 Vinter, J. Odell, J.P.  
 Wall, Walter William.  
 Wagner, H. R.  
 Watson, Ralph Cook.  
 Webb, Montagu de P.  
 Wilkins, Henry H. J.

On the recommendation of the Council, the undermentioned were elected Honorary Fellows of the Society at the Ordinary Meeting on the 17th May :—

**J. De Vargha.** (Austria-Hungary.)

Director of the Central Statistical Bureau of Hungary, Budapest.

**Emile Waxweiler.** (Belgium.)

Director of the Sociological Institute, Brussels; Professor of Economics and Finance at the University of Brussels.

**Dr. Wilhelm Lexis.** (Germany.)

Professor of Economics at the University of Göttingen; Vice-President of the International Statistical Institute.

**Fedele Lampertico.** (Italy.)

Senator, Member of the Academy "dei Lincei," Vicenza.

**C. A. Verrijn Stuart.** (Netherlands.)

Director of the Central Statistical Bureau of the Netherlands, The Hague.

The financial condition of the Society is shown in the Auditors' report, *vide* Appendices A(i), A(ii). The current year began with a balance of 480*l.* 2*s.* 8*d.*, the receipts were 2,045*l.* 1*s.*, and the expenditure 1,875*l.* 3*s.* 10*d.*, leaving a balance of 649*l.* 19*s.* 10*d.*, an increase of 169*l.* 17*s.* 2*d.* over that of 1902. Details for the last twenty-five years are given in Appendix B. The cordial thanks of the Council have been tendered to the Auditors for their honorary services in auditing the Treasurer's accounts for the past year.

The contributions to the Society's transactions presented at the Ordinary Meetings of the Session, 1903-04, have been as follows :—

1903.		
First .....	17th November ....	CRAIGIE, Major P. G. The President's Address. Second Report of the Meat and Milk Committee.
Second ....	15th December ....	SIEMENS, Alex. The Metrical System of Weights and Measures.
1904.		
Third .....	19th January .....	WELTON, T. A. On the Smaller Urban Districts of England and Wales.
Fourth ....	16th February ....	HARTLEY, E. L. Trade Union Expenditure on Unemployed Benefit.
Fifth .....	15th March .....	HARPER, E. J. Statistics of London Traffic.
Sixth .....	19th April .....	TOZER, W. H. Five Years' Experience of the Effect of the Workmen's Compensation Acts with Especial Reference to Schemes certified thereunder.
Seventh ....	17th May .....	THOMPSON, B. J. Local Expenditure and Local Indebtedness in England and Wales.
Eighth ....	21st June .....	Third Report of the Meat and Milk Committee. REW, R. H. Observations on the Production of Meat and Dairy Products in the United Kingdom.

Appendix C is intended to show, as far as is practicable, the growth of the Society's Library during the past two years, and also

the extent to which it is used by Fellows of the Society and others. It is estimated that, exclusive of periodicals, about 1,000 publications of varying sizes are received yearly by the Society, most of them being official returns. The periodicals number about 170, and include weekly, monthly, and quarterly returns dealing with trade, labour, or other vital statistics, as well as proceedings or journals of societies and institutions, and newspapers.

The monthly average number of books lent during 1903 was 73, in 1902 it was 58; the average number of borrowers per month was in the first-named year 42, in 1902 31. Adding the number of those who visit the Library to consult books, and for other purposes, the total was 1,113 in 1903, and 711 in 1902, or an average of 93 persons per month in 1903, and 59 persons per month in 1902.

The figures given as to the attendance of Fellows and others for study in the Library, indicate that the interest taken in the work of the Society is being well maintained. The record of attendance at the ordinary meetings of the Society shows an average of 59 for the current year. The Council again desire to express their thanks to those gentlemen whose valuable papers have so largely contributed to the increased interest shown in the Society's work.

The work of cataloguing and indexing the many additions which have been made to the Library since the completion of the printed catalogue has been steadily pursued. The various references are being entered upon cards and arranged in a card cabinet, so as to make the results immediately available for reference by those visiting the Library.

The President of the Local Government Board having acceded to a request from the Council that he would afford them an opportunity of laying before him their views as to the desirability of a quinquennial census, a deputation from this society and other influential bodies interested in the subject, waited upon him on the 13th of May. The deputation was introduced by Sir Francis Sharp Powell, Bart., M.P., who had already placed a notice of motion on the Order Book of the House of Commons. It was sympathetically received by Mr. Long, who intimated that the advantages of the proposal were recognised by him, and that the practicability of giving effect to it would receive careful consideration. A full report of the proceedings will be found in this number of the *Journal* (vol. lxvii, part ii).

The Special Committee appointed for the purpose of inquiring into the statistics available with regard to the consumption of meat

and milk in this country, has continued its labours during the year now closing. The Final Report of the Committee dealing particularly with the Consumption of Milk in the United Kingdom has now been presented, and brings the work of the Committee to a conclusion.

The subject for the Howard Medal for 1902-03 was "The Alleviation of the Evils of Over-crowding by the Development of the Means of Transit," but as the essays were not up to the standard required, no award was made.

The Council have decided that in the session of 1904-05, the Howard Medal, together with 20*l.*, shall be offered for an essay on the following subject :—

"A Critical Inquiry into the Comparative Prevalence of Lunacy  
"and other Mental Defects in the United Kingdom during  
"the last Fifty Years."

The British Association for the Advancement of Science met in 1903 at Southport, when Mr. E. W. Brabrook, C.B., a Vice-President of the Society, occupied the Chair of the Statistics and Economics Section, and other Fellows contributed to the work of that Section.

Reference was made in the Presidential Address in November to the biennial meeting of the International Statistical Institute held at Berlin, in September, 1903. The Society was represented on that occasion not only by Major Craigie, who was again the official delegate from this country, but also by the Honorary Foreign Secretary (Mr. Baines) and by Mr. F. Hendriks. The President, on behalf of the Society, conveyed an invitation to the International Statistical Institute to hold its meeting for 1905 in London, a proposal which was cordially accepted. The Council have appointed an Organising Committee for the purpose of making preliminary arrangements for the meeting, which it is proposed to hold in the week commencing 31st July, 1905, when a large attendance of representative foreign statisticians is expected. The Council invite the co-operation of all Fellows of the Society, and of others interested in the development of statistical science, in welcoming the members of the International Statistical Institute once again to the birthplace of that Association, after a period of twenty years since its establishment at the celebration of the jubilee of this Society in 1885.

Dr. B. W. Ginsburg, who for six years past acted as Secretary of the Society and Editor of the *Journal*, tendered his resignation at the end of last year. A vote of thanks was passed to him by the

Council in recognition of the services he had rendered to the Society. Mr. J. A. Cable, B.A., LL.B., was appointed to fill the post of Assistant Secretary.

The following Fellows (nominated in accordance with By-law 14) are recommended for election as President, Council, and Officers of the Society for the Session 1904-05 :—

# PROPOSED COUNCIL AND OFFICERS FOR 1904-05.

## PRESIDENT.

SIR FRANCIS SHARP POWELL, BART., M.P.

## COUNCIL.

Arthur Hutcheson Bailey, F.I.A.	Noel A. Humphreys, I.S.O.
J. A. Baines, C.S.I.	Arthur William Waterlow King.
*Henry Birchenough, M.A.	Charles S. Loch, B.A.
Sir James Blyth, Bart.	Sir John Macdonell, C.B., LL.D.
Sir Ernest Clarke.	Richard Biddulph Martin, M.A., M.P.
*Nathaniel L. Cohen.	*Francis G. P. Neison, F.I.A.
*Richard F. Crawford.	*L. L. Price, M.A.
*Rev. W. Cunningham, M.A., D.D.	Lesley Charles Probyn.
Frederick Charles Danvers.	R. Henry Rew.
Geoffrey Drage, M.A.	William N. Shaw, M.A., F.R.S., D.Sc.
Prof. F. Y. Edgeworth, M.A., D.C.L.	Hubert Llewellyn Smith, C.B., M.A.
Arthur Wilson Fox, C.B.	*David A. Thomas, M.A., M.P.
Sir John Glover.	The Rt. Hon. The Earl of Verulam.
Alfred Spalding Harvey, B.A.	Thomas Abercrombie Welton, F.C.A.
Frederick Hendriks, F.I.A.	Arthur Whitelegge, C.B., M.D.

Those marked \* are new Members of Council.

## TREASURER.

Richard Biddulph Martin, M.A., M.P.

## HONORARY SECRETARIES.

Noel A. Humphreys, I.S.O. | J. A. Baines, C.S.I.

R. Henry Rew.

## HONORARY FOREIGN SECRETARY.

J. A. Baines, C.S.I.

The abstract of receipts and payments, and the estimate of assets and liabilities on 31st December, 1903, together with the report of the Auditors on the accounts for the year 1903, are appended.

Signed on behalf of the Council,

P. G. CRAIGIE,

*President.*

J. A. BAINES,

N. A. HUMPHREYS,

R. H. REW,

} *Hon. Secretaries.*

J. A. CABLE,

*Assistant Secretary.*



## APPENDICES TO ANNUAL REPORT.

A (i).—ABSTRACT of RECEIPTS and PAYMENTS for the YEAR ending  
31st DECEMBER, 1903.

RECEIPTS.		£ s. d.		PAYMENTS.		£ s. d.	
Balance on Deposit ...	£300 - -			Rent, less Tax .....	£351 11 3		
" in Bank, 31st } December, 1902 ... }	151 4 1			Less sublet .....	100 - -		
Balance of Petty Cash	23 17 11					251 11 3	
" Postage } Account }	5 - 8			Rates and Taxes .....		50 1 -	
		480 2 8		Fire, Lights, and Water .....		89 17 5	
Dividends on 2,900L } Consols and 400L } G.N.R. Stock .....	88 5 10			Furniture and Repairs .....		26 6 -	
Interest on Deposit.....	10 11 2			Salaries, Wages, and Pension ...		606 15 -	
		98 17 -		Journal, Printing.....	£529 2 8		
Annual Subscriptions:—				" Shorthand } Reporting }	35 15 4		
53 Arrears (one for } 2L 0s. 2d. only) }	111 4 2			" Literary } Services }	28 2 9		
643½ for 1908 .....	1,351 7 -					593 - 4	
26 in Advance .....	54 12 -			Ordinary Meeting Expenses .....		21 2 6	
		1,517 3 2		Advertising .....		17 11 5	
722½				Postage and delivery of Journals..		84 13 3	
Compositions .....	84 - -			Stationery and Sundry Printing...		47 18 11	
Journal Sales .....	298 1 4			Library.....		91 6 2	
Advertisements in Journal .....	51 19 6			Incidental Expenses .....		43 10 7	
				Guy Medal .....		1 10 -	
Total .....	£2,525 3 8					1,875 3 10	
				Balance on Deposit ...	£800 - -		
				Balance per Bank } Book .....	810 5 8		
				Balance of Petty Cash	86 4 8		
				" Postage } Account..... }	8 9 6		
						649 19 10	
				Total .....	£2,525 3 8		

(Signed)

" CHAS. ATKINSON,

" A. H. BAILEY,

" S. CHAPMAN,

} Auditors."

" 3rd February, 1904.

## A (ii).—ESTIMATE of ASSETS and LIABILITIES on 31st DECEMBER, 1903.

LIABILITIES.			ASSETS.		
	£	s. d.		£	s. d.
Harrison and Sons, for December } Journal .....	114	8 8	Balance on Deposit ... £800 - -		
Miscellaneous, as per list .....	142	12 8	Cash Balances .....	349	19 10
26 Subscriptions received in ad- } vance .....	54	12 -			649 19 10
	311	12 11	2,900 <i>l.</i> New 2½ per cent. Consols } cost }	2,760	14 5
Balance in favour of the Society ...	3,669	6 7	400 <i>l.</i> G.N.R. Preferred Con- } verted Ordinary Stock...cost }	484	11 6
(Exclusive of (1) the Rever- sionary Interest bequeathed to the Society by the late Dr. Guy; (2) Books in Library; (3) Journals, &c., in Stock; and (4) Pictures, Furniture, and Fixtures.)			Arrears of Subscriptions reco- } verable ..... say }	52	10 -
	£3,980	19 6	Sundry debtors .....	83	3 9
				£3,980	19 6

(Signed)

" CHAS. ATKINSON,

" A. H. BAILEY,

" S. CHAPMAN,

} *Auditors.*

" 3rd February, 1904.

A (iii).—BUILDING FUND (ESTABLISHED 10th July, 1873), BALANCE SHEET,  
on 31st DECEMBER, 1903.

This Fund is invested in Metropolitan Consolidated Three and a Half per Cent. Stock. On the 31st December, 1902, the Fund was invested in 314*l.* 4*s.* -*d.* Stock, with the dividends received during 1903, additional Stock to the amount of 9*l.* 16*s.* 10*d.* was purchased by the Bank of England for the Society. Accordingly, on the 31st December, 1903, the total investment amounted to 324*l.* -*s.* 10*d.* Stock.

## A (iv).—"REPORT OF THE AUDITORS FOR 1903.

*"The Auditors appointed to examine the Treasurer's Accounts of the Society for the Year 1903,*

**"REPORT:—**

*"That they have compared the Entries in the Books with the several Vouchers for the same, from the 1st January to 31st December, 1903, and find them correct, showing the Receipts (including a Balance of 480l. 2s. 8d. from 1902) to have been 2,525l. 3s. 8d., and the Payments 1,875l. 3s. 10d., leaving a Balance in favour of the Society of 649l. 19s. 10d. at the 31st December, 1903.*

*"They have also had laid before them an Estimate of the Assets and Liabilities of the Society at the same date, the former amounting to 3,980l. 19s. 6d., and the latter to 311l. 12s. 11d., leaving a Balance in favour of the Society of 3,669l. 6s. 7d., exclusive of (1) The Reversionary Interest bequeathed to the Society by the late Dr. Guy; (2) Books in the Library; (3) Journals, &c., in Stock; and (4) Pictures, Furniture, and Fixtures.*

*"The Building Fund at the end of the year 1902 was invested in 314l. 4s. —d. Metropolitan Consolidated Three and a Half per Cent. Stock, and, with the Dividends received during 1903, additional Stock to the amount of 9l. 16s. 10d. was purchased by the Bank of England for the Society. Accordingly, on the 31st December, 1903, the total investment amounted to 324l. —s. 10d. Stock.*

*"They have verified the Investments of the Society's General Funds and the Building Fund, and also the Banker's Balance, all of which were found correct.*

*"They further find that at the end of the year 1902 the number of Fellows on the list was 932, which number was diminished in the course of the year to the extent of 49, by Death, Resignation, or Default, and that 56 new Fellows were elected or restored to the list, leaving on the list on the 31st December, 1903, 939 Fellows of the Society.*

(Signed)

" CHAS. ATKINSON,

" A. H. BAILEY,

" S. CHAPMAN,

} Auditors."

"3rd February, 1904.

## B.—Statement of the Condition of the Society in the last Twenty-five Years 1879-1903.

Year.	Number of Fellows on 31st December.	Number of Com-pounders included therein.	Losses during Year by Deaths, &c.	Gains by Election, &c., during Year.	Income from				All Sources.	Total.	Expenditure.			Amount Invested on 31st December.	Year.
					Annual Subscrip-tions.	Composi-tions.	Journal Sales.	Investments and other Sources.			Of which	On Journal.	On Library.		
£	£	£	£	£	£	£	£	£	£	£	£	£			
1879....	783	119	52	89	1,300	126	176	96	1,698	1,808 <sup>a</sup>	671	34	2,400	1879	
1880....	808	129	49	74	1,317	273	202	110	1,902	1,806 <sup>a</sup>	573	80	2,700	1880	
'81....	807	130	45	44	1,306	84	145	114	1,649	1,697 <sup>a</sup>	609	37	3,000	'81	
'82....	786	135	63	42	1,291	189	227	131	1,838	1,782 <sup>a</sup>	553	60	3,000	'82	
'83....	860	139	41	115	1,361	126	150	141	1,778	1,943 <sup>a</sup>	585	49	3,500	'83	
'84....	909	150	57	106	1,447	294	207	1,198	3,146 <sup>b</sup>	3,088 <sup>a</sup>	645	38	2,600	'84	
'85....	928	148	55	74	1,462	63	188	349	2,062 <sup>d</sup>	2,070 <sup>e</sup>	625	27	2,500	'85	
'86....	943	156	70	85	1,583	231	180	92	2,086	2,106 <sup>e</sup>	785	32	2,500	'86	
'87....	977	160	59	93	1,621	126	188	94	2,029	2,135 <sup>f</sup>	609	87	2,500	'87	
'88....	1,059	172	58	140	1,686	334	171	101	2,292	2,003	711	58	2,500	'88	
'89....	1,060	175	69	70	1,678	126	229	82	2,115	2,060 <sup>g</sup>	623	146	2,500	'89	
1890....	1,063	177	65	68	1,764	84	156	94	2,097	2,096 <sup>a</sup>	567	68	2,900	1890	
'91....	1,019	172	80	36	1,707	42	146	181	2,076 <sup>h</sup>	1,957 <sup>i</sup>	582	172	2,900	'91	
'92....	994	171	70	45	1,634	84	158	104	1,980	1,833 <sup>j</sup>	539	94	2,900	'92	
'93....	964	176	66	36	1,560	124	128	92	1,904	1,921	578	63	2,900	'93	
'94....	983	180	67	36	1,491	105	152	82	1,830	1,904	649	75	2,900	'94	
'95....	928	180	59	54	1,468	63	180	82	1,793	1,823 <sup>k</sup>	576	56	2,900	'95	
'96....	910	181	48	30	1,478	42	168	84	1,772	1,787	571	44	2,900	'96	
'97....	892	182	58	40	1,472	145	157	83	1,857	1,986 <sup>l</sup>	650	50	2,900	'97	
'98....	878	180	57	43	1,451	115	182	105	1,853	1,825	609	55	3,300 <sup>m</sup>	'98	
'99....	896	181	44	62	1,432	95	167	127	1,821	1,805	564	33	3,300	'99	
1900....	923	179	36	63	1,514	21	189	148	1,872	1,817	521	53	3,800	1900	
'01....	926	177	49	52	1,464	63	211	129	1,867	1,823	518	42	3,800	'01	
'02....	932	177	52	58	1,504	21	255	152	1,932	1,839	543	73	3,800	'02	
'03....	939	174	49	56	1,517	84	293	151	2,045	1,875	593	91	3,800	'03	

<sup>a</sup> Includes purchase of Government stock.<sup>b</sup> Includes sale of 1,000<sup>l</sup> stock.<sup>c</sup> Includes expense of moving to new premises.<sup>d</sup> Includes Dr. Guy's legacy of 250<sup>l</sup>.<sup>e</sup> Includes cost of Jubilee Volume.<sup>f</sup> Includes cost of Catalogue and Index, and of Charter.<sup>g</sup> Includes cost of part iv of Index to Journal.<sup>h</sup> Includes Mrs. Lovegrove's legacy of 100<sup>l</sup>.<sup>i</sup> Includes outlay for Guy Medal and for binding the "Times."<sup>j</sup> Includes outlay for drainage repairs.<sup>k</sup> Includes cost of Subject-Index to Journal.<sup>l</sup> Includes cost of doing up interior of premises.<sup>m</sup> 2,900<sup>l</sup> consols; and 400<sup>l</sup> G.N.R. stock, purchased with Mr. J. Heywood's Legacy of 500<sup>l</sup>.

C.—Numbers of Books Added to the Library and Lent, and Numbers of Borrowers from the Library in 1902, 1903, and part of 1904.

Months.	Books, &c., Received.*			Books Lent.						Borrowers.			Visitors using the Library.			Months.		
	1902.	1903.	1904.	1902.		1903.		1904.		1902.	1903.	1904.	1902.	1903.	1904.			
				Books.	Vols., &c.	Books.	Vols., &c.	Books.	Vols., &c.									
January .....	325	377	353	76	108	73	89	73	94	42	45	48	78	86	98	January		
February .....				74	87	86	103	77	95	77	89	39	47	40	63	85	74	February
March .....				69	94	75	91	78	89	78	89	39	45	44	57	94	96	March
April .....	323	326		—	38	41	47	59	56	69	22	27	30	74	58	73	April	
May .....					50	58	64	84	—	—	—	24	36	—	50	56	—	May
June .....					38	43	115	140	—	—	—	25	54	—	38	108	—	June
July .....	334	345	—		64	85	86	124	—	—	32	57	—	73	166	—	July	
August .....					66	80	73	93	—	—	—	30	43	—	49	96	—	August
September .....					35	50	53	60	—	—	—	20	30	—	54	76	—	September
October .....	388	353		—	71	88	70	96	—	—	38	42	—	64	92	—	October	
November .....					57	82	45	60	—	—	—	36	35	—	58	108	—	November
December .....					77	109	94	107	—	—	—	30	44	—	53	88	—	December
Year .....	1,370	1,401	—		700	925	881	1,106	—	—	377	505	—	711	1,113	—	Year	
Monthly average	114	116	—		58	77	73	92	—	—	31	42	—	59	93	—	Monthly average	

\* These are the numbers of entries in the quarterly *Journal* under "Additions to Library," and do not represent the number of volumes, &c., of a book; they are also exclusive of about 170 periodicals received yearly.

## PROCEEDINGS of the SEVENTIETH ANNUAL GENERAL MEETING.

Major P. G. CRAIGIE, C.B., President, in the Chair.

THE PRESIDENT having read the notice convening the meeting, the minutes of the last ordinary meeting were read and confirmed.

The PRESIDENT (Major P. G. Craigie, C.B.) announced that under Rule 3 of the Rules for the award of the Guy Medal, the Council had awarded a Guy Medal in silver to Mr. D. A. Thomas, M.A., M.P., for his paper on "The Growth and Direction of our Foreign Trade in Coal during the last Half-Century," read before the Society at its meeting on 19th May, 1903.

Mr. J. A. BAINES, C.S.I. (Hon. Secretary), then read a summary of the Report of the Council, which was then taken as read.

The PRESIDENT moved "that the Report of the Council, the abstract of receipts and payments, the estimate of liabilities, and the report of the auditors be adopted, entered on the minutes, and printed in the Society's *Journal*."

He said there were several matters referred to which in ordinary circumstances must have given occasion for comment, but there were only one or two which required to be specially borne in mind in reviewing the work of the past year. They were very grateful to the gentlemen who had read papers and enabled the work of the session to be conducted with undiminished interest to the public at large, as well as to the Fellows who were not able to be present at the meetings but read the proceedings in the *Journal*. The chief domestic event of the year was the deputation which Sir Francis Sharp Powell had the goodness to introduce to the President of the Local Government Board, and which drew from the President what he thought might be regarded as quite as favourable a response as could be given by a Minister in charge of the census of one division of the Kingdom, and regard being had to the great difficulty which had to be encountered in making any change of this nature on account of the cost of the operation, which required the sanction of another department which was often slow to move in the direction of increased expenditure. They hoped, however, that the publicity given to the report of that deputation would induce all the other societies which united with them on that occasion to keep pressing the question on their representatives in Parliament, and to generally stimulate the movement by giving really practical effect to an effort which the Society had been making almost as long as he could remember—the taking of a quinquennial census in the intervals

between the decennial censuses now taken. If they could succeed in effecting that reform, they would, from the mere point of view of statistics, quite apart from the general bearings of such a change, have done good work for the co-ordination and extension of the statistical knowledge of the country. The other matter to which he should like to call attention was the reference made to the approaching visit of the International Statistical Institute, which, it was hoped, would take place in London in the summer of 1905. Mr. Baines, who was with him at Berlin, could bear testimony to the enthusiasm with which the suggestion he made on that occasion was received, and the desire expressed by many of their foreign colleagues to be present in London on that auspicious occasion. The International Institute, in its present form, took its rise in London twenty years ago on the occasion of the jubilee of their Society, and it was only fitting, having now grown to full stature, that it should come back here and report in the place of its birth what had been done in the interval and what progress had been made in other countries. He desired, therefore, to appeal to all Fellows to help in every way they could in making the visit a memorable one. He had no doubt the Treasurer of the International Institute would be glad to tell them what were the most recent arrangements made by the bureau, of which he was a member, with regard to the coming meeting. They had not yet published anything beyond what was stated in the report, but he hoped that at an early date they would be able to give a forecast of the subjects which would come before them for consideration, and of the steps which would be taken to entertain their foreign colleagues. He concluded by formally moving that the report, abstract of receipts and payments, estimates of liabilities, and report of the auditors, be adopted, entered on the minutes, and printed.

Sir WILLIAM CHANCE, Bart., in seconding the motion, said he hoped the efforts of the Society to obtain a quinquennial census would meet with success, since as time went on, the necessity for it became more pressing.

Sir ALFRED BATEMAN said that, as the Honorary Treasurer of the International Statistical Institute, he should especially like to support what the President had said relating to the meeting of the Institute in London next year, and to express the hope that the Fellows of the Society would do all in their power to make the meeting a great success. England was the birthplace of the Institute in 1885, and it was a happy thought that it should revisit their shores next year. Much excellent work had been done by the Institute, and, to quote a particular case, he was quite sure that the Fiscal Blue Book of last year could never have been brought out had it not been for the International Statistical Institute. In the opinion of most people that Blue Book supplied a real want; and, since it was to be published, it was desirable that it should be a trustworthy publication, and this could only be accomplished by the co-ordination of different bureaux. As long as the various bureaux

derived their knowledge of one another from correspondence only, no influences could be brought to bear to secure the greater efficiency of the statistics of each country, which had now happily been accomplished in many places. For this reason alone, he hoped Fellows of the Society would extend a warm welcome to their foreign friends next year, so that they might have a pleasant and profitable visit. He hoped that the visitors would include a number of French and Germans, some Russians and Scandinavians, Italians, and Americans, and perhaps some South Americans, and he hoped that by that time one or two of their Japanese colleagues would be able to come. In conclusion, he would only say that, when the time came, he would rely on their hearty support.

The motion was then put, and carried unanimously.

Mr. BARFOOT-SAUNT and Professor FLUX were appointed scrutineers of the ballot for the election of President, Council, and Honorary Officers for the ensuing Session, which then proceeded.

The HONORARY SECRETARY having presented a list of defaulters, the PRESIDENT formally declared that they had ceased to be Fellows of the Society.

The PRESIDENT announced that the subject of the essay for the Howard Medal for 1904-05 was: "A Critical Inquiry into the Comparative Prevalence of Lunacy and other Mental Defects in the United Kingdom during the last Fifty Years."

The SCRUTINEERS reported that the proposed President, Council, and Honorary Officers had been unanimously elected.

Mr. J. A. BAINES moved a cordial vote of thanks to the Scrutineers.

Mr. R. HENRY REW seconded the motion, which was unanimously carried.

Sir WILLIAM CHANCE, Bart., moved a vote of thanks to the President, Council and Honorary Officers for their services during the past year.

Mr. W. H. BARFOOT-SAUNT seconded the motion, which was unanimously carried.

The PRESIDENT, on behalf of himself and his colleagues, thanked the Fellows for their kind appreciation. Speaking for himself, it had been a great gratification to him to have filled the Chair, with the assent of so many of his old colleagues, for the last two years, and he felt quite sorry the time had come to an end. It had been a very pleasant opportunity of working with many men he had known for a number of years, and he hoped they had worked



together with some advantage to the country. In leaving the Chair and handing over the position to a successor so well qualified as Sir Francis Sharp Powell, he felt assured that the interests of the Society would not suffer; on the contrary, they would be represented in high political circles in a manner which could hardly fail to be useful. Sir Francis had shown his interest in the work by the lead he had given in the matter of the census, and they might take that as an earnest of his work for the Society in years to come. He must again express what he mentioned in his first address in November, 1902, a word of regret that they had not been able, during the time he occupied the Chair, to accomplish one object to which they set themselves about two years ago, viz., to mature a plan for the final housing of the Society. He wished they would all individually bear in mind that they would have to leave those very comfortable quarters before a very long time. They would have plenty of time to turn round, and they would not be precipitate, but they must formulate some scheme, and he thought it would be very desirable if they could unite with one or two other societies having cognate objects, and form a sort of corporation for a single house suited to their requirements, including accommodation for their library, which was rapidly growing, and for their meetings. He had heard within the last few days that there was just a possibility of some further step being taken in the matter. Those which were taken last spring came to nothing, but he hoped before long the Society would be housed in a manner worthy of its traditions. He concluded by again thanking them for the support they had given him during his term of office, which he should always remember with perfect satisfaction.

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## MISCELLANEA.

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*I.—Proceedings of the Deputation to the President of the Local Government Board, Friday, 13th May, 1904.*

SIR FRANCIS SHARP POWELL, M.P., Bart., in introducing the deputation said : " I have the high honour and privilege of introducing to you a deputation in support of the principle, and I hope the practice, of having a quinquennial census of a limited character, namely, dealing with numbers, sex, and age. The deputation, as you will see by the list which I have handed you, is eminently representative in character. It was initiated by the Royal Statistical Society, a society which deals chiefly with figures, and we have been fortunate enough to conciliate a large body of learned opinion represented by Societies highly competent to express with authority an opinion on this subject. It is eminently a non-party question. Mr. Ritchie and Mr. Chaplin both expressed in the House of Commons their opinion that a quinquennial census would be of great advantage. Mr. Shaw-Lefevre has spoken in the same sense, and hoped to have been here to-day to advocate his views. As regards the two remaining Presidents, your predecessors Sir Charles Dilke and Sir Henry Fowler, I have distinct authority from them to state their regret at not being able to be present and their desire to support the views of this deputation. As regards the places represented, we have representatives of England, Wales, and some from Scotland. As regards the Metropolis, I need not say a single word, because here we have a quinquennial census, and so far our principle has been adopted. I need not enlarge on the importance of the subject, but I just wish to make one remark, and that is to show the necessity of a quinquennial census. We find in the report of the last census, 1901, that there was a discrepancy between the estimated and enumerated population of England and Wales of no less than 701,843 in 1891, and of 142,000, an error in the opposite direction, in 1901. Then when we come to deal with towns I find that in West Ham the estimated population for 1901 was in excess by 58,278, entailing an error in the estimated death-rate of 3·5 per 1,000. Taking Burnley, in

Lancashire, we find the estimate in excess by 22,500, and the estimated death-rate in consequence 3·8 per 1,000 below its actual figure. Bradford, in Yorkshire, again, was assigned an estimated population lower than the actual number of its inhabitants, and that justly proud town was somewhat mortified as a result.

"On the other hand, we find Liverpool with an enumerated population 49,741 in excess of the estimate, and a consequent error in the death-rate of 1·9 per 1,000; and, coupled with Liverpool, I may mention Southampton with an enumerated population 12,508 in excess of the estimate, and an error in its death-rate of 2·4 per 1,000.

"These are very disturbing figures. They deal with large populations, and the figures are of considerable magnitude. Mr. Gray, the member for West Ham, is here to-day, but in order to save time is content to leave his case in your hands, as amply made out by the figures.

"I think those figures are really quite sufficient to show that there is a need of reform. Sir John Tuke was to have been here, and he is very emphatically in favour of this deputation. He says that the calculations are pretty sound for the first two or three years after the census is taken, but towards the end of that time they are wholly unreliable, and there is no better authority than Sir John Tuke, and no town in Great Britain where more is known of the subject than it is in Edinburgh.

"I need not go into details, I think I may simply say that this is a matter affecting the welfare of the population as regards industry, as regards education, and as regards health. Each of these subjects would, for adequate treatment, occupy considerable time, but I will confine myself to saying that on every one of these points we feel the very great importance of the reform we seek. I will now call on Major Craigie, the President of the Royal Statistical Society."

Major CRAIGIE, C.B., said: "Mr. Long, I have to ask you to be good enough to note that I appear to-day solely in my capacity of President of the Royal Statistical Society for the current year. In that capacity it is my duty to represent to you the strong view which the Society has for a long time held as to the necessity of a more frequent enumeration of the population of this country. Committees of the Society have given their careful attention to successive census measures in 1880, 1887, 1894, and again in 1899, in anticipation of the last census, have all in turn successively pressed forward the arguments for this administrative change. They have held a profound conviction of the absolute necessity of co-ordinating all the other statistics of the country by the great levelling and governing measure which the existing population at any given date provides for the correct appreciation of any or all of the figures we collect, with a view to determine with accuracy our national position. We, as you know, collect the most minute statistics of trade, not only year by year, but even month by month. We collect

statistics of mineral output, statistics of railway traffic, the ascertained numbers of our cattle and other live stock, the acres of our crops, and the estimates of agricultural produce. But we do not ascertain by anything more than a loose estimate, except once in ten years, the actual numbers of the population, the dominant factor which governs every statistical investigation into the condition of national health, wealth, and well-being. I also desire to call your attention to the point that the Society itself has frequently pressed on this Department the great advantage of securing a continuity of administration, now absent from our official methods, as one of the immediate consequences of a quinquennial enumeration of this kind, for which we ask the Government to make provision. The change will necessitate a small nucleus of permanent census officials who will bring to the aid of the Registrar-General and his able staff the valuable assistance of regular continuity of administration. At the present time our census work is dislocated by the length of the break between one census and another, involving the getting together a scratch staff once in ten years. I believe that even from the point of view of economy, considerable saving might be secured by maintaining a nucleus such as would be sufficient for the intermediate census, restricted as that is proposed to be to the age, sex, and the distribution of the people. Economy, both of time and of money, in the long run in the cost of the actual census-taking at each decennial period, may not unreasonably be expected to follow such arrangements as the Deputation now desire to have made. It is scarcely necessary for me to refer to the number of foreign countries, such as Germany and France, who have long ago recognised this position and taken the steps which we press on our own Government, but I should like to call special attention to the new departure which the United States of America have taken within the last few months in the setting up a permanent Census Bureau in one of their official departments.

"I think I have made clear the strong interest which the Royal Statistical Society, as the guardians of the interests of Statistical Science in this country, feels in urging on the Government to take a quinquennial enumeration, limited to the particulars I have named."

Sir ROBERT GIFFEN, K.C.B., said: "I appear here on behalf of the Statistical Society, as Chairman of the Committee which has specially to do with the census, and, of course, I have had some acquaintance with these matters in other capacities for a good many years. If you will refer to the evidence which I gave before the Departmental Committee, which sat in advance of the census of 1891, you will see that I was by no means desirous of involving the country in the great expense of quinquennial censuses, and that I made various suggestions for taking censuses of particular localities and things of that kind, so as, if possible, to do something for the end in view without involving the country in great expense, but I am now satisfied that a quinquennial census is the best way

out of the difficulty. There has been a great deal of evidence since 1891 to show the expediency of having the quinquennial census. There is no doubt, as Major Craigie has stated, that if you go to the expense of having the annual statistics of cattle, sheep, and other animals, there is very good reason indeed why you should also provide for a proper enumeration of the population of the country, which is far more important. I should like to say one word in favour of the latter part of Major Craigie's remarks with reference to the advisability of having the quinquennial census, on the ground that it would necessitate the establishment of a permanent census office. Such an office would really be a great advantage. One defect of our present census arrangement is that we have not sufficient means of studying officially the figures which the census gives us. There ought to be a continuous study of the matter going on in the Government Department which has charge of the census, to find out in what way all these particulars, which are obtained at so much expense, can be made useful. There is also this advantage, that if all the arrangements for a census are kept in working order, you can take a new census with greater ease, with an official establishment in existence, than you can by making it only every ten years, and then going to Parliament to have a new Act passed and setting fresh machinery in motion. There ought to be a permanent office, and a permanent Act of Parliament to carry on the investigations which are required."

Sir MICHAEL FOSTER, K.C.B., M.P., said: "Appearing, Mr. Long, as I do on behalf of no Society, I will limit myself to speaking, not on the general question, but on two or three facts drawn from my own personal experience.

"I served some years ago on the Vaccination Commission, and the recommendations of that Commission were based very largely on statistical evidence. Having the question of population coming before us in that form, we had to deal frequently with comparatively small numbers, and I remember very distinctly that again and again we had to rely, not on actual ascertained results, but on calculations as to the estimated population towards the end of the decennial period. I myself felt again and again that there was want of strength in some of the conclusions (I am speaking of some of the minor conclusions) from the problematical character of the data upon which they were founded. I may perhaps go a little further, and say that the Commission sat for a long time, extending from one decennial period into another, and, though I only speak from memory, I think I am correct in saying that we had the opportunity on several occasions of using the census returns to verify some of the minor conclusions which had been arrived at by calculation in the previous decennial period, and we were able to see that the conclusions which we arrived at were based upon evidence which was not exact."

Mr. G. H. RYAN, F.I.A., said: "Sir, I appear with the President and Honorary Secretary of the Institute of Actuaries as representing

that Institute, and I have been asked to address you to-day, on behalf of the Institute, as one who has given some attention to the subject of census reform, and has read a paper before that body on the matter.

"We, as Actuaries, have to deal with problems depending on birth-rates, death-rates, and marriage-rates. If the Statistical Society may be likened to a general physician we are specialists dealing with this branch of the subject in particular. We therefore feel it is of the greatest importance that the population statistics upon which we often have to depend, in the last resort, shall be as accurate as circumstances permit. It is true that actuaries have their sectional tables of mortality prepared from other sources under their own control; but, after all, the population statistics, which we obtain from the decennial census, represent the national mortality, and to these must often be referred all the sectional experience which we prepare from our own observation. For these reasons, I desire to associate myself with the arguments and the appeal which Sir Francis Sharp Powell and Major Craigie have to-day addressed to you. I will not repeat what they have so forcibly said, but I have not heard any objection made to the quinquennial census, except on the ground of expense. The people who are to be enumerated have never appealed against it, or applied to Parliament that they should not be enumerated more than once in ten years; and it therefore seems to me that the sole objections are internal and rest upon official convenience and national expense. As regards the advantages of a revised census, it is surely not unreasonable that the system which was introduced in 1801, when the population of England and Wales was 8,000,000 and the decennial increment 1,250,000, should have become clumsy and ineffective after a hundred years, when the population has risen to 32,000,000 and the decennial increment to 3,500,000. We think it not unreasonable to ask you to bear in mind these greatly increased figures in considering this change which we recommend.

"On one point, to which no speaker has hitherto referred, I would ask permission to say a word. We are of opinion that greater frequency in census enumerations would lead to greater accuracy in the results. We believe that if there were quinquennial censuses, people who, for illustration, may be in the habit of returning their ages at the same figure—no matter whether they are giving them in 1840, or 1850, or 1860—would perhaps depart from that practice, and would get into the habit of returning their particulars with greater accuracy. If I may use a homely illustration, just as to get a shy horse past a formidable obstacle, you have to lead him frequently by it, so we think the population of this country would, by quinquennial censuses, become more used to the process, and be induced to give to the population statistics a greater accuracy than they now possess.

"This question has been agitated by the Royal Statistical Society and other bodies for more than fifty years, and we, of the Institute of Actuaries, do earnestly beg that you will use your great influence in favour of this modest and much needed reform."

Mr. A. WYNTER BLYTH, M.R.C.S. (Registrar of the Sanitary Institute), said: "I appear on behalf of the Sanitary Institute. That Institute represents no special class connected with the public health, but may be considered to represent all classes, and the Council of that Institute very strongly desire to support the views that have been expressed. Arguments have been employed which are based upon the usefulness of a quinquennial census for imperial, for educational, and for municipal purposes, but, as a Medical Officer of Health, I would also urge the great importance of accurate statistics as supplying the only true indication of the state of health of the population. The only arguments that have been stated against such a measure are (1) the expense involved, and (2) that the people as a whole object to be enumerated.

"With regard to the expense it should not be forgotten that while a more frequent census will, no doubt, require the organisation of a permanent census department, yet the gradual adoption of various small details of reform suggested by experience will ultimately go far to reduce the expenditure—despite a more frequent enumeration of the people. With regard to the possible objection on the part of the population, I have had, in my twenty-five years' experience as health officer, rather frequently to take small local censuses—censuses of streets and of artisans' dwellings—and I can confidently say that in no case has any difficulty been experienced, or objection made. Of course, the census that I allude to has not been on the scale of the elaborate census which successive Governments have taken every ten years, but of the nature of the very simple census that this deputation is asking you to adopt. I would once again say that the Council of the Sanitary Institute feel very strongly the importance of this proposal."

Dr. EDWARD W. HOPE said: "I appear as a representative of the Society of Medical Officers of Health. This Society is the oldest public health society in existence. It numbers about a thousand members, and I may say the feeling amongst them is absolutely unanimous as to the necessity of a quinquennial census to meet the requirements of health purposes. Further, I would mention that resolutions have been passed by the various branches of this Society, as well as by the Society itself, in favour of such an undertaking. The real reason, Sir, however, for which I have been asked to address you is that I am able to point to one of the most striking examples of the wide margin of error which arises from limiting the census to a decennial period. It is by no means the most striking, but it is sufficiently striking. In the census of the City of Liverpool, taken in 1891, it was found that the margin of error in the Registrar-General's estimate of the population which had been gradually expanding, had reached the enormous total of 100,000 people in a city of the size of Liverpool. This had a very marked and a very practical effect upon the health-rate and the prosperity of the inhabitants. It will be apparent to you that if, in the year 1886, we were assured upon the returns of the Registrar-General that the mortality of

Liverpool, which at that time comprised only the central portions of the great sea-port, was 23 per thousand, we should feel there was no great urgency to proceed with the sanitary measures which common observation suggested were necessary; and, as a consequence, from 1886 to 1890, there was a slacking off in measures which were needed in the interests of the health of the people, because the necessity for them was obscured altogether by the totally erroneous returns which were issued under the Government imprimatur year after year. In 1891, when the actual facts were established, of course there was a greater impetus given to sanitary undertakings, but, towards the end of the last decade, again an error crept in. But on this occasion the error was in the opposite direction. It was an under estimate of about 50,000 people. The consequence was that those who were not, perhaps, specially keen on sanitary measures, were able to point to the fact that certain districts of the City, with which you may be familiar, which were formerly slums, pent-up courts and alleys, but which had been opened up and had given place to artizans' dwellings, to baths and wash-houses, to open spaces, and so on,—that all these things were shown by the Registrar-General to be useless, inasmuch as they were associated not with a decline but with an actual increase in the rate of mortality. I mention that instance merely as one out of many to show what an extremely serious effect is produced upon the health of the people by the protracted periods allowed to elapse between the taking of the census, and with regard to Liverpool, I should like to add that, although we can hardly claim it as a health resort, it is, like many health resorts, deeply interested in the returns of sickness and mortality. We have a very important foreign connection. We have a larger consular representation in Liverpool than in any city of the world. There are the representatives of forty Foreign Governments located in Liverpool, and these gentlemen are interested in the condition of the health of the City. Questions of quarantine and many others may arise, and many of the Consuls require, week by week, the returns from the Health Department showing the state of health of the City. They have been quick to perceive when there has been a discrepancy between the returns issued from London and the returns issued locally; and what is their explanation? They naturally assume that we are putting a better face upon the matter than is really warranted. Here again is a most awkward fact, that the Health Authorities of a great municipality like Liverpool should be brought into absolute antagonism on this question with the Registrar-General's Department! Regrettable as it may appear, we can hardly avoid the impression that it would be better to refrain from publishing any statistics, unless we can be sure that they are founded upon an accurate basis.

"These are the reasons, Sir, which commend themselves to the Society of Medical Officers of Health, the Authorities of the Health Committee of Liverpool, and other places, and which I beg most respectfully to place before you."



Dr. JOSEPH GROVES (British Medical Association) said : "The British Medical Association has a membership of 20,000 medical men, who in their corporate capacity interest themselves in all affairs which have to do with the public health.

"We beg to point out to you the great discrepancy between the official estimates and the census returns, and the consequent errors in the estimated rates of deaths, births, and sickness. That in other countries, not so rich as ours, quinquennial censuses are found practicable. Further, we desire to urge the desirability of a permanent census authority, and to bring before you what you already know, how important it is that Medical Officers of Health should have at their disposal, as quickly as possible, any change in the returns, and we think that would be greatly facilitated by the establishment of a permanent census staff."

The Right Hon. W. H. LONG said : "I am much obliged to you, Sir Francis, and to the gentlemen who have spoken, for the brevity with which they have put their case, and I should like at once to acknowledge the importance of the deputation which I have the honour to receive, an importance which is made perfectly clear when one studies the names of those who have addressed us, and the names of the others who have been content to let themselves be represented by the few who have spoken.

"As far as I know, my predecessors have all of them concurred in the views which have been expressed here to-day, as to the desirability, from our point of view as a public health department, of having a more frequent census taken than is at present the case. I should like to add, with reference to a remark which fell from Mr. Ryan, that I do not think there is any justification for it. He told us that the only opposition to this proposal arises from two causes : official convenience, or national expenditure. I really do not think there is any question of official convenience in it, for, as far as I know, all the officials who are connected with the census work would welcome the alteration. The opposition has rested, and if it still exists, rests at present, purely on the question of expenditure. We have been told to-day that there are many cases in which grave inaccuracies have been discovered in the census. I confess myself that having been in my present position when the last census was taken, and having had the opportunity of visiting the census office and watching the work in progress under the late Registrar-General Sir Reginald McLeod, I am surprised, not that inaccuracies should be discovered, but that greater inaccuracies were not found than those which actually came to light. Because it is obvious that work of so important a character as the taking of the census of the United Kingdom, when it is entrusted to a staff got together from all parts of the world for the occasion, and located in premises which can hardly be called of a permanent character, that there must be grave risks of inaccuracies and of mistakes, and I think it is wonderful, and reflects the greatest possible credit on those who have been responsible for the census work, that it has been done as well as it has been, having regard to the circumstances and

conditions under which it has been carried on. You have put the case to-day in the clearest possible manner, and I have had one or two points cleared up with regard to which I was in doubt. For instance, I was aware of the fact that when the Commission sat in 1900 there was a report by the members of the Commission, but there was also a minority report, or an addition, by Sir Reginald Welby (the present Lord Welby), and he then suggested that the proposals which had been made by Sir Robert Giffen, in his evidence, might form an alternative which would be worthy of consideration, and, possibly, of adoption. I understand Sir Robert Giffen to-day wishes to make it clear that the evidence and facts which have come before him since have led him to believe that the proposals which he then made would not meet the case, and, therefore, we must regard it as being the larger scheme that is before us, and not the smaller one. I agree with Sir Robert Giffen, but, as you are aware, the matter does not rest solely with me in this Department. I have to communicate with the Scotch and Irish Departments, and to ascertain what their views would be. I have not yet been able to satisfy myself what would be the precise financial effect of making the census quinquennial, and establishing a permanent staff in place of the present system. I cannot help thinking that if some portion of the staff were to be made permanent in its character that there ought to be, and would be, a considerable reduction in the actual numbers required. It is obvious that men who are continuously engaged upon a particular kind of work must be able to deal with it with at least equal accuracy and with much greater rapidity than those who are comparatively fresh to it, and who are called upon to do it at a racing speed, and find themselves very often—as many of them must find themselves—quite unable to realise at first how the work is to be done. Therefore I cannot help hoping that any estimate based upon the cost of the census as taken now is one which must be to some extent misleading. What I am anxious to do is to ascertain whether I can carry this proposal further by arriving at some calculation which will show that the hope indulged in by Mr. Ryan and others, that this might result not only in more statistical information, but also in economy of public money, will be fulfilled. I am not quite sure that that is not rather a rosy view to take of the case, but I am not certain that it is altogether without foundation. I hope it may be possible to reduce the cost of taking the census by the establishment of a permanent department, if that be decided upon, and of course it will strengthen my hands very much, in going to the Treasury, if I am able to show them that the additional cost will not be what it has hitherto been expected to be, namely, a sum of about 150,000*l.*, without allowing anything for the establishment of a permanent branch. 150,000*l.* does not sound very much when it is compared with our national expenditure of many millions, but my colleagues in the House of Commons who are here know that, while they are here to-day to recommend the additional expenditure of 150,000*l.*, in all human probability they will be in this or some other office, in the course of the next few

months, recommending other increases of national expenditure which are regarded as being quite as important by those proposing them as is this expenditure by the gentlemen present to-day. Therefore, of course, this cannot be regarded as if it were the only proposal to be made to the Treasury for an increase of expenditure. The Treasury are bound, as I am sure you will admit, to weigh the claims of all who come to them with demands for public money. All that we can do is to make our case as clear and strong as we can, and to do everything we possibly can ourselves, before we go to the Treasury, to see that the necessary expenditure is brought down to the lowest possible limits. This deputation will be, of course, a great advantage, because it will bring the question before the country and before the Treasury with added importance. The facts that have been disclosed here will in due course be laid before the Treasury by me. They have been very clear, and, I venture to say, very striking. We have been told by Major Craigie that this improved statistical information is necessary in the interests of the wealth and the health of the country; and when we have such gentlemen as Sir Robert Giffen and Sir Michael Foster speaking—none from his eminent statistical experience, and Sir Michael Foster telling us that in the very important Royal Commission on which he sat for so long many of their conclusions were arrived at on calculations of figures which ultimately turned out to be inaccurate and misleading—when facts of that striking character are brought before us, I think it shows that the question has advanced, and has reached a very important stage. All I can do to-day is to promise you to bring these facts, with such additions as I can make to them on the lines I have indicated to you, before the Treasury, and I hope that I may find them in a generous mood, and that they will be able to give favourable consideration to what I hope will be a practicable proposal."

Sir FRANCIS SHARP POWELL said: "I have only to thank you, on behalf of the deputation, for the great patience with which you have listened to our statement, and for the highly sympathetic manner in which you have received it."

The deputation then withdrew.

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II.—*Note on the Registrar-General's Sixty-fourth Annual Report, being that for the Year 1901.* By THOMAS A. WELTON.

THE letter by Dr. Tatham annexed to this report is of great interest in itself, and seems to foreshadow some improvement in the treatment of statistics relating to deaths.

The remarkable variations in age distribution in different parts of England and Wales reduce to a low point the utility of the tables extending from page 168 to page 242. The importance of these variations is fully recognised by Dr. Tatham in his remarks upon mortality by cancer; and in dealing with the mortality by phthisis he also gives due attention to the disturbance at ages 15 to 35 caused by migrations.

If in lieu of the tables mentioned we could have a new set, dealing with the mortality by the most destructive causes in a more satisfactory manner, I think we should be gainers. For this purpose I would not tabulate every registration district, nor even every county, but would group the registration districts according to their character. The largest towns should be represented by groups of districts, and industrial areas should be grouped on somewhat similar principles to those adopted in my paper read on 19th January, 1897. About one hundred groups of registration districts would, I think, amply display the varying conditions of English life.

I think it a mistake to tabulate mortality by different causes under "persons." The difference of the sexes is striking enough to call for separate treatment in every case.

The following tables as to the mortality per thousand *amongst males* at several periods of life are sufficient to show what causes of death might be tabulated, *only for the ages they most affect*, in order to facilitate the calculation of ratios at each of such ages by the independent inquirer:—

Age 0—5. Population 1,855,361.	Deaths in 1901.	Per Thou- sand.	Age 5—25.* Population 6,490,129.	Deaths in 1901.	Per Thou- sand.
Diarrhœa, dysentery	14,719	7·9	Phthisis .....	4,318	0·7
Atrophy, debility .....	11,025	5·9	Violent deaths .....	2,929	0·5
Premature birth .....	10,445	5·6	Diseases of heart } and blood vessels }	1,708	0·3
Pneumonia .....	9,950	5·4	Pneumonia .....	1,601	0·2
Convulsions .....	9,812	5·3	Diphtheria .....	1,527	0·2
Bronchitis .....	9,088	4·9	Enteric fever .....	1,251	0·2
Measles .....	4,501	2·4	Tuberculosis me- } ningitis .....	827	0·1
Whooping cough .....	4,457	2·4	Scarlet fever .....	777	0·1
Diphtheria .....	2,766	1·5	Meningitis, inflam- } mation of brain }	753	0·1
Meningitis, inflam- } mation of brain }	2,563	1·4	Other causes .....	7,632	1·2
Violent deaths .....	2,475	1·3			
Enteritis .....	2,397	1·3			
Congenital defects .....	2,144	1·2			
Tuberculosis me- } ningitis .....	2,142	1·2			
Gastro enteritis .....	1,972	1·1			
Teething .....	1,750	0·9			
Tabes mesenterica .....	1,674	0·9			
Scarlet fever .....	1,362	0·7			
Other causes .....	14,339	7·7			
	109,581	59·0		23,323	3·6

\* I throw these ages together because the total mortality is low and is much affected by migrations, as is also that at the next age.

	Deaths in 1901.	Per Thou- sand.		Deaths in 1901.	Per Thou- sand.
Age 25—35. Population 2,485,954.			Age 55—65. Population 907,945.		
Phthisis .....	5,371	2·2	Diseases of heart } and blood vessels }	8,410	9·3
Violent deaths .....	1,920	0·8	Cancer .....	3,353	3·7
Diseases of heart } and blood vessels }	1,425	0·6	Bronchitis .....	2,943	3·2
Pneumonia .....	1,327	0·5	Phthisis .....	2,296	2·5
Enteric fever .....	711	0·3	Pneumonia .....	2,116	2·3
Other causes .....	4,796	1·9	Violent deaths .....	1,647	1·8
	15,550	6·3	Bright's disease .....	1,398	1·5
Age 35—45. Population 1,931,943.			Cirrhosis of liver .....	713	0·8
Phthisis .....	5,603	2·9	Influenza .....	486	0·5
Diseases of heart } and blood vessels }	2,788	1·4	Other causes .....	7,198	8·1
Violent deaths .....	1,998	1·0		30,560	33·7
Pneumonia .....	1,979	1·0	Age 65—75. Population 477,868.		
Cancer .....	804	0·4	Diseases of heart } and blood vessels }	10,077	21·1
General paralysis of } insane }	620	0·3	Bronchitis .....	3,957	8·3
Bright's disease .....	592	0·3	Old age .....	3,150	6·6
Alcoholism .....	538	0·3	Cancer .....	2,958	6·2
Bronchitis .....	489	0·3	Pneumonia .....	1,557	3·3
Enteric fever .....	460	0·2	Bright's disease .....	1,172	2·5
Cirrhosis of liver .....	382	0·2	Violent deaths .....	1,049	2·2
Other causes .....	4,292	2·2	Diseases of bladder ...	831	1·7
	20,545	10·6	Phthisis .....	762	1·6
Age 45—55. Population 1,396,209.			Other causes .....	7,090	14·8
Diseases of heart } and blood vessels }	4,957	3·6		32,603	68·3
Phthisis .....	4,393	3·1	Age 75 and upwards. Population 183,204.		
Pneumonia .....	2,289	1·6	Old age .....	9,727	53·1
Cancer .....	2,040	1·5	Diseases of heart } and blood vessels }	6,518	35·6
Violent deaths .....	1,976	1·4	Bronchitis .....	3,549	19·4
Bronchitis .....	1,383	1·0	Cancer .....	1,263	6·9
Bright's disease .....	968	0·7	Diseases of bladder ...	809	4·4
Cirrhosis of liver .....	697	0·5	Pneumonia .....	804	4·4
Other causes .....	6,592	4·7	Other causes .....	5,491	29·9
	25,295	18·1		28,161	153·7

If the deaths by *all causes* were shown at each age, I doubt whether such headings as "old age" require separate mention.

The contemplated table would give about 16,600 facts, but I think these will be of greater value than those, about 47,000 in number, recorded in the 75 pages to which I have referred.

It is of course a matter for medical and other experts to say whether such details as I have here shown, together with the full tables on pp. 136—167 relating to London and to the country as a whole, will give them all they want. I should think special tables for the various divisions of the period under 5 years of age could be easily framed; and as to the age 85 and upwards, I have not enough confidence in the returns to induce me to wish for a

separate statement of deaths. Once established, the tables should be continued for a long period for purposes of comparison.

As respects the statistics of total deaths in sub-districts given on pp. 4—63, I cannot help thinking that deaths in institutions should be invariably excluded and separately tabulated, and I should much value a return showing the *ages at death* of those who, according to the table on pp. 76—77, died in institutions in each county. I am anxious to know how far our people are in their last days indebted to charity, especially those who attain longevity of years.

### III.—*Fires in London and the Metropolitan Fire Brigade in 1903.*

THE following particulars are taken from the Report of the Chief Officer to the Fire Brigade of the London County Council, in continuation of similar notices for former years:—

*"Table showing Number of Fires since the Year 1893.*

*"Average for Ten Years.*

Year.	Number of Fires.		
	Serious.	Slight.	Total.
1893-1902 .....	147	3,882	3,529
1903.....	61	3,339	3,400

"These cases of fire entailed the turning out of brigade men and appliances for work in extinguishing fires, and do not include chimney fires and false alarms.

#### *"Accidents and Injuries.*

"The number of accidents to members of the brigade recorded during 1903 is 210, one of which was fatal. It was due to service.

"The following are particulars of the accidents necessitating men going on the sick list:—

Nature of Accidents due to Service.	Number of Cases.
Burns and scalds .....	4
Contusions .....	26
Incised, lacerated, and punctured wounds .....	19
Injuries to feet and legs .....	30
" back, chest, hips, and ribs .....	14
" hands and arms .....	35
" head and face .....	11
Injuries, internal .....	3
Partial suffocation .....	7
Sprains and strains .....	23
Total due to service .....	172
Accidents not due to service .....	38
Total .....	210

"There have been during the year 480 cases (including 19 due to service) of illness, five of which resulted in death.

"One hundred and nineteen officers and men were struck off the strength of the brigade during the year.

*"Authorised Strength of the Brigade.*

*"Staff.*

1 chief officer.	36 men under instruction.
1 second "	17 pilots.
1 third "	181 coachmen.
1 senior superintendent.	8 officials engaged on hydrant work.
7 superintendents.	1 store officer.
7 district officers.	1 mechanical engineer.
83 station "	10 storekeepers and clerks.
170 first class firemen.	1 working foreman.
152 second class firemen.	38 mechanics and labourers.
630 third and fourth class firemen.	1 telephone attendant.

*"Material and Duties.*

72 land fire stations, with horses.	8 skiffs.
5 floating or river stations.	184 hand fire escapes.
21 street and sub-stations, without horses.	29 long fire ladders.
1 hose cart station in the street.	79 ladder vans.
1 " and ladder truck station in the street.	2 trollies for engines.
18 hand fire escape stations in the street.	9 hose and coal vans.
3 hose cart and hand fire escape stations in the street.	3 " ladder vans.
1 fire float.	6 traps for visiting.
5 steam fire engines on barges.	1 locomobile.
77 land steam fire engines.	1 first-aid motor appliance.
1 motor steam fire engine.	1 tractor.
15 six-inch manual fire engines.	2 stores vans.
2 under six-inch manual fire engines.	3 canteen vans.
7 hose tenders.	4 bicycles.
5 " and ladder trucks.	41 watch boxes.
100 " carts.	304 horses.
45 miles of hose.	124 telephone lines between fire stations.
4 steam tugs.	927 fire alarms.
9 barges.	30 telephone lines to police stations.
	234 " public and other buildings.
	1 bell-ringing fire alarm from a public building.

The following particulars are obtained from the tables appended to the report, viz.: fires classified according to occupations, and arranged in the order of frequency of occurrence; to which are added, for the purpose of comparison, the corresponding figures for the three previous years:—

Number.	Occupations.	Number of Fires in			
		1903.	1902.	1901.	1900.
1	Private houses .....	957	1,036	1,005	921
2	Lodgings .....	651	722	718	676
3	Commons, roads, and open spaces .....	83	69	70	52
4	Victuallers .....	71	100	71	92
5	Drapers .....	44	30	35	23
6	Unoccupied .....	40	45	50	43
7	Greengrocers and fruiterers .....	40	37	29	38
8	Tailors, clothiers, and outfitters .....	40	34	42	44
9	Under repair and building .....	38	47	53	42
10	Tobacconists .....	37	32	25	12
11	Offices .....	36	44	48	31
12	Coffee houses .....	36	22	36	29
13	Confectioners and pastrycooks .....	35	58	41	33
14	Oil and colourmen .....	35	24	32	36
15	Restaurants and refreshment rooms .....	32	35	29	39
16	Contractors .....	31	20	10	17
17	Builders .....	30	38	38	39
18	Chandlers .....	30	19	27	18
19	Cabinet makers .....	29	48	35	27
20	Boot and shoe makers .....	29	42	40	41
21	Fried fish shops .....	28	21	17	23
22	Hairdressers .....	26	20	14	11
23	Furniture makers and dealers .....	26	24	25	25
24	Railways .....	24	29	39	36
25	Printers and publishers .....	24	25	33	24
26	Bakers .....	23	33	34	25
27	Grocers .....	22	38	27	38
28	Engineers and machinists .....	21	14	32	19
29	Warehouses .....	20	10	8	3
30	Booksellers, binders, and stationers .....	19	15	19	10
31	Stables .....	16	19	21	23
32	Laundries .....	16	14	23	28
33	Butchers .....	16	13	22	18
34	Beershop .....	16	8	17	17
35	Institutes .....	16	6	1	—
36	Let out in tenements .....	15	18	14	8
37	Hotels (including club-houses) .....	14	25	26	27
38	Provision merchants (wholesale) .....	14	3	—	—
39	Motor cars, &c., on road .....	14	10	6	13
40	Waggons on road .....	14	9	18	21
41	Corn dealers .....	13	19	14	12
42	Ironmongers .....	13	7	18	12
43	Chemists .....	13	10	14	23
44	Ships (steam) .....	12	6	5	14
45	Jewellers .....	12	10	9	13
46	Fishmongers .....	11	16	15	10
47	Dairymen .....	11	11	16	6
48	Timber merchants .....	11	7	9	7
49	Schools .....	11	10	15	7
50	Packing-case makers .....	10	6	1	6
Remainder .....		2,825 575	2,958 616	2,946 788	2,732 653
Total .....		3,400	3,574	3,684	3,385



Fires classified under the causes to which they have been assigned and arranged in the order of frequency of occurrence:—

Number.	Causes.	Number of Fires in			
		1903.	1902.	1901.	1900.
1	Lamps (not gas) and lights thrown down	756	629	602	563
2	Unknown	680	1,087	1,195	1,156
3	Gas in various ways	347	304	270	290
4	Sparks from fires, &c.	259	246	275	238
5 {	Defective or improperly set flues, hearths, stoves, &c.	231	271	274	204
6	Candles	225	229	203	212
7	Children playing with fire, matches, &c.	213	207	170	174
8 {	Boiling over, or upsetting of fat, oil, pitch, &c.	94	59	65	50
9 {	Overheating of flues, ovens, furnaces, boilers, &c.	92	67	79	83
10	Airing linen and drying stoves	81	75	88	78
11	Hot ashes	73	76	102	74
12	Electric wires, defective electric circuit, &c.	53	26	27	22
13	Gas stoves, overheat of, &c.	46	61	64	42
14	Mineral oil stoves, explosion, upsetting of	41	66	81	50
15	Foul or blocked flues, &c.	35	41	43	43
16	Clothes, &c., in contact with fire	26	14	13	7
17	Vapour of spirit in contact with flame	19	13	22	10
18	Lucifer matches	15	18	9	7
19	Lime slaking	15	6	14	—
20	Smoking tobacco	12	13	12	13
21	Burning rubbish	9	7	15	9
22	Petrol, overflow of	9	—	—	—
23	Spontaneous ignition	8	—	—	—
24	Fumigating	7	8	6	6
25	Lighted taper	7	10	8	12
26	Arson	4	—	—	—
	Miscellaneous, various, from 3 to 1 each	43	—	—	—
	Total	3,400	3,574	3,684	3,385

#### IV.—Agricultural Statistics, 1903. *Report on the Agricultural Returns for Great Britain.*

THE volume of Agricultural Statistics annually issued by the Board of Agriculture and Fisheries, brings together in a convenient compass the figures relating to the farming interest in Great Britain. The tables embodying the particulars of the crops and live stock in 1903, which were published in separate departmental papers as they became available, are here collated for reference, and in

addition thereto, detailed statistical information is given of the weather of the year, and the prices, imports, and exports of agricultural commodities. The latest available figures of the crops and live stock in British possessions and foreign countries are also shown in detail. In the present volume several new tables have been added. The changes which have occurred in the annual value of land according to the assessments in force for income tax and rating purposes are exhibited, and a series of tables is given embodying the result of an inquiry into the size of agricultural holdings throughout the country.

Major Craigie in his introductory report states that the returns relating to the size of holdings do not show that any very distinctive alteration in the size of farms is in progress at the present time. They suggest, however, a relative growth in the number of those medium-sized farms lying between 50 and 300 acres in which, as he has previously pointed out, the larger part of the cultivated land of Great Britain is held. Eliminating the holdings of less than 5 acres in extent, the following statement shows the number of separate holdings in Great Britain, as ascertained last year and on two previous occasions :—

Years.	Small (5 to 50 Acres).	Medium (50 to 300 Acres).	Large (over 300 Acres).	Total Holdings above 5 Acres.
1885 .....	232,955	144,288	19,364	396,607
'95 .....	235,481	147,870	18,787	402,138
1903 .....	232,892	150,055	18,031	401,028

The changes thus indicated are discussed in the report, and attention is directed to the fact that the average size of a farm in Great Britain has slightly decreased within the past eighteen years.

The inclusion of the returns for Ireland enables the total acreage under crops in the United Kingdom to be made up, and the figures for 1903 in comparison with the two preceding years are thus summarised :—

United Kingdom.	1901.	1902.	1903.
	Acres.	Acres.	Acres.
Area under all crops and grass	47,761,000	47,753,000	47,708,000
Permanent pasture .....	28,374,000	28,409,000	28,545,000
Arable land .....	19,387,000	19,344,000	19,163,000
Corn crops .....	8,477,000	8,517,000	8,393,000
Green „ .....	4,231,000	4,241,000	4,147,000
Clover and rotation grasses ...	6,141,000	6,108,000	6,091,000
Flax .....	56,000	51,000	46,000
Hops .....	51,000	48,000	48,000
Small fruit .....	81,000	80,000	81,000
Bare fallow .....	350,000	299,000	357,000

The results of last year's harvest in Great Britain are concisely indicated in relation to the decennial average in the following table :—

Year.	Wheat. — Average 1893-1902, 30'53 Bushels per Acre = 100.	Barley. — Average 1893-1902, 32'83 Bushels per Acre = 100.	Oats. — Average 1893-1902, 38'65 Bushels per Acre = 100.	Potatoes. — Average 1893-1902, 5'89 Tons per Acre = 100.	Turnips and Swedes. — Average 1893-1902, 12'88 Tons per Acre = 100.	Hay (Clover). — Average 1893-1902, 27'96 Cwts. per Acre = 100.	Hay (Permanent Grass). — Average 1893-1902, 22'32 Cwts. per Acre = 100.
1893 ....	85	87	92	112	103	67	56
'94 ....	101	105	108	94	105	116	128
'95 ....	86	97	96	113	100	97	86
'96 ....	110	102	95	107	96	86	78
'97 ....	95	100	100	88	109	104	112
'98 ....	114	109	105	106	93	120	131
'99 ....	107	104	100	95	72	98	103
1900 ....	93	95	98	83	110	104	109
'01 ....	101	94	95	108	95	91	75
'02 ....	108	106	110	95	117	116	122
'03 ....	99	97	103	88	97	109	115

The prices of corn as ascertained under the Corn Returns Act are shown for 1903, and for a long series of years, and attention is directed to the fact that the average price of British barley has only once, in 1895, been lower than in 1903, during the past fifty-two years. New tables given in this section of the volume show the price of bread in various parts of the United Kingdom during the past three years; and in deference to inquiries addressed to the department, quotations from various sources are given representing the prices of specified grades of wheat at some of the principal markets in the world during the past quarter of a century.

Major Craigie directs attention to the increased imports of beef, mutton, butter, eggs, and wheat last year. The total receipts of wheat, in the form of grain, were larger by 356,000 tons than in 1902, and nearly one-third greater than the average supply for the previous decade. The amount of wheat-flour imported, although rather more than in 1902, was less than in some recent years. The various sources of our wheat supply are considered, and a table is given showing the percentage of the total sent by each of the chief exporting countries during the past five years. The proportions of some of the principal commodities received in 1903 from foreign countries and British possessions respectively, are indicated as follows :—

Imports.	Total Received in 1908.	Of which from British Possessions.	Percentage from British Possessions.
	Tons.	Tons.	Per cent.
Wheat and flour .....	5,837,000	1,578,000	27
Other grain .....	4,957,000	374,000	8
Total cereals .....	10,794,000	1,952,000	18
Beef.....	240,000	14,000	6
Mutton .....	203,000	112,000	55
Pig meat.....	362,000	44,000	12
Meat (unenumerated) .....	45,000	6,000	13
Total dead meat.....	850,000	176,000	21
Butter.....	203,000	28,000	14
Cheese.....	185,000	95,000	71
Fruit and nuts .....	759,000	106,000	14

The statistics relating to colonial and foreign agriculture are brought up to the latest possible date. Major Craigie observes that the quinquennial averages of the yield of grain show the pre-eminent position still held in this respect by our own country as regards the cereal produce of the soil, compared with the record of any European competitor whose crop areas are of sufficient dimensions properly to compare with our own. On the minor areas of countries like Belgium and Holland, no doubt, where larger results are claimed, comparison with equally small and select surfaces in particular parts of our own territory might, perhaps, prove favourable to the results achieved by the British producer under like conditions. The comparative statistics also afford a useful reminder of the low yields attributed to the wide grain areas of great producing countries like the United States, India, Russia and Argentina, whence so large a proportion of our bread corn is imported.

#### V.—Notes on Economical and Statistical Works.

*The Growth of English Industry and Commerce in Modern Times.* By W. Cunningham, D.D. In two parts: Part I, *The Mercantile System*, xxxviii pp.; Part II, *Laissez-faire*, xii + 1039 pp. Cambridge: The University Press, 1903. 25s. net.

The latest edition of that portion of Dr. Cunningham's history which deals with Modern Times is the product of so thorough a revision, and so large a rearrangement of detail, that it might almost be treated by a reviewer as a new work instead of a reproduction of an old treatise of established repute. The critic who is satisfied

with nothing less than perfection may think that in some sections it might still be possible by further alteration to place the material in a more luminous order, in which it would leave on the mind of the reader a more enduring and sharp impression. We may fancy, for example, that the changes known as the Industrial Revolution are blurred on Dr. Cunningham's pages, even when we make allowance for his laudable desire to avoid that subtle danger which has beset not a few narrators of economic no less than of general history, of being betrayed by an excess of emphasis into departure from the bare literal truth. No one, however, can read this history without feeling that a keen anxiety to reach and state the facts is a chief characteristic of Dr. Cunningham's writing. No one can doubt that no pains have been spared by him in examining all the accessible material. No one will question his readiness to revise opinions in the light of fresh information. In this new edition for instance he attributes less importance than before to the Navigation Act, and he acknowledges that the assessments of wages under the Statute of Apprenticeship may have been more frequent and operative than he had previously considered probable. These alterations of view are illustrative of his perfect candour, although they serve also to demonstrate the uncertainty which may still be found in the byways of economic history, if this line of the highways can now be fixed with tolerable certainty. Dr. Cunningham's assiduity in pushing his investigations along these side paths cannot be appreciated too highly. But we may think, rightly or wrongly, that on a few out of many occasions he may set too high a value on new material he has found, and that, in consequence of the very abundance of the harvest his researches have gathered, he may not succeed in subordinating the unimportant to that which should be made conspicuous. He may, in fact, to quote an old proverb, fail to see the wood for the trees, or rather he may not attain complete success in enabling his readers to avoid this failure.

But these are the defects of his qualities. For of this at least we may be certain, that the necessary material for a competent and accurate knowledge of English economic history can be discovered in Dr. Cunningham's chapters, and, for the greater part of the period covered in these two new volumes, can be discovered nowhere else in so full and yet so convenient and compact a form. Dr. Cunningham's History is not merely the best, it is practically the only, economic history of the times it narrates. It is in fact a standard work; and in this edition it has been greatly improved. Not merely has it grown in bulk by the incorporation of fresh material, due in part to recent investigation, and this characteristic—to select one special instance—is notably illustrated in connection with the administration of the Poor Law during the Stuart Period. For, as Dr. Cunningham shows, the economic activity of the Government under the Restored Monarchy was considerable and pervasive, and Orders of the Privy Council reflect as they conveyed this remarkable energy. But the volumes have we think gained also by rearrangement. The very separation into two parts is an illustration of this, for the period when *Laissez-faire* became the ruling principle in English economic

affairs is definitely parted from that deliberate policy of promoting the power of the nation by stimulating and directing economic action by governmental regulation and authoritative impulse which characterised the Mercantile System. And, similarly, the period of the Mercantile System itself may properly be divided into subordinate epochs, marked by the important differences which Dr. Cunningham notes. We can thus understand that principles and modes of action which were possible when the Monarchy was powerful, and commerce and industry were comparatively stable and simple, became impossible when Parliamentary control took the place of the King and his Privy Council, and the whole course of trade and manufacture was transformed by the Industrial Revolution. And, if, lastly, we consider even shorter periods of time, the section devoted to the policy of Burleigh, which, Dr. Cunningham states, is the work of Miss Tomm, to whose assistance indeed he has been greatly indebted throughout the preparation of the new edition, furnishes a most graphic and convincing picture of the sage persistent action in economic affairs of that able and distinguished statesman. Even a hasty reader cannot fail to appreciate and remember this account. Dr. Cunningham's new edition is, in short, a storehouse of the most valuable, the most necessary and the most recent information; and it exhibits no small advance on the older editions in the essential qualities of clearness of arrangement and capacity to attract and retain the interest of the reader. To say that it is not susceptible of further improvement would be to abandon the rôle of critic; to refuse a generous tribute of hearty admiration to so arduous and excellent an achievement would afford proof of inability to recognise desert. L.L.P.

*Stability of International Exchange. Report on the Introduction of the Gold-Exchange Standard into China and other Silver-using Countries.* 518 pp., 8vo. Washington, 1903.

The gradual narrowing of the areas within which monetary valuations are based on silver has made it necessary for the governments of the two chief countries which retain that standard to give very serious attention to the situation which is being created. Early in 1903 the Mexican Government, having secured in advance the support of the Chinese Imperial authorities, appealed to the Government of the United States for its co-operation in efforts to secure the adoption of some plan whereby the rate of exchange between the silver-using and the gold-standard countries might be given stability for the future. The appointment of Commissioners by the United States followed, and the Commission, accompanied by delegates from Mexico, visited Great Britain, France, Holland, Germany, and Russia, conferring in each country with Commissioners appointed to meet them, and to discuss the points to which they desired to direct attention. The volume before us contains the report presented by the American Commissioners on their return, and a large number of documents bearing on the problem discussed.

It appears likely that there may be established in the near future in the Straits Settlements, in French Indo-China, and in some other Eastern dependencies of European countries, systems of currency

involving a local circulation of silver coin, the value of which may be, like that of India, based on gold. The American Commission advanced proposals for the establishment of a like system in China, and urged the desirability of the selection of approximately identical valuations for silver by all the countries which may adopt the gold-exchange standard with a silver currency. The special purpose of such similarity in the different systems is to provide a restraint on fluctuations in the price of silver, in an upward direction, of such extent as to endanger the stability of the currencies thus established. Taking, for purposes of argument, the coinage ratio of 32 to 1, proposed as satisfactory by the Commission, the alleged advantages include the following points. The coins would have a bullion value somewhat below their value as coin, but not so greatly inferior as to encourage the illicit manufacture of coins, and thus deprive the Government of the power to regulate their value by restricting the volume of the circulation. Some scope for a variation of the market value of silver in the upward direction would be left without reaching the point where it could become profitable to melt the coins and dispose of them as bullion. Should a considerable number of Governments adopt approximately the same coinage ratio, say 32 to 1, or near it, the rise of the price of silver to about 28 or 29 pence per standard ounce would cause a cessation of purchases of silver for coinage purposes by all these Governments, and thus tend to depress the market and protect the coins from being consigned to the melting pot. Wide differences between the ratios adopted by different countries would practically destroy this corrective and stabilising influence.

Attention must, however, be given to the outlook for the maintenance of silver at a price not so far below the coinage value which may be selected as to endanger the safety of currencies wherever the efficiency of the police system cannot be relied on to check illicit coinage. Very interesting data were offered in reference to the conditions of production and the relation of production to consumption of silver. It was shown that both production and consumption have increased very greatly during the last thirty years. In recent years, however, the production has increased but little, and, outside Mexico, it has even decreased. Thus consumption has overtaken production, and there is no accumulation of stocks. The adoption of a gold standard in Mexico would, it is estimated, check somewhat the production of silver, as the expenses of production would cease to be measured in the product. As to consumption, the industrial uses are expanding, and now account for about one-third of the production. This expansion is, apparently, expected to continue, even if the value of silver does not fall further. The establishment of silver currencies in China and elsewhere is expected to fully maintain, or even increase, the demand for silver for coinage purposes. Thus a consumption of undiminished extent, and a production not expanding, are presented as probable, and these are conditions tending to maintain the market value in the neighbourhood of its actual level. It is stated, however, that some

three-fourths of the total production is derived from ores yielding other metals as their chief product, especially copper and lead. Thus the output of silver, so far as derived from such ores, is hardly affected in volume by the price of silver. It is urged that any further fall in silver will make it necessary to raise the prices of copper and lead to a level which would check demand, and that thus a fall in silver would restrict its production even from these sources. The argument offered is not as conclusive as its propounders would desire. It would seem that they have proved too much if the non-expansibility of the output of silver from copper and lead mines, and the probable restraint on Mexican mining, resultant on a fixation of the gold value of the currency of the country, be granted. The influences relied on tend to a rise in the value of silver, and what is wanted is some assurance that there will be a substantial balance between the forces tending to a rise and those tending to a fall. On this point the arguments offered do not appear adequate, but that was hardly to be expected.

The proposals for the establishment of a Chinese Imperial currency are deserving of notice. They urge that China should establish a mint controlled by a foreigner, approved by the Governments of the great nations of the world. By using the seigniorage on the silver to be coined, and by means of a loan duly secured, a gold reserve is proposed, deposited at the chief financial centres of the world, at any rate in part. Should the silver currency become temporarily redundant, it would be offered to the currency department in exchange for gold or for drafts payable in gold at foreign centres. To insure complete maintenance of the value of the currency, the ability of the Government to withdraw, and to retain, whatever amounts of currency might thus be offered, is required—that is, the ability to provide gold reserves of adequate amount. No reliance on possible sales of the silver, withdrawn from circulation, to replenish the gold reserve, seems to be deemed necessary. The American Commission urged the feasibility of combining the operations of establishing a silver currency in China with securing a stable rating to gold of that currency. The English and the Russian Commissioners were doubtful of the advisability of proceeding to the latter simultaneously with the former. The difficulties of the one reform are sufficiently serious, and its success might be hindered by attempting too much. The American delegates, as stated, thought that it would be advantageous to effect the whole reform at once.

The report of the Commissioners seems to over-estimate the degree of support commanded in Europe by their proposals. An agreement as to the desirability of effecting reforms on the general lines suggested was certainly manifested, but the careful study of the documents accompanying the report hardly seems to justify in full the confident tone adopted by the Commissioners. The full and frank abandonment of all attempts to effect the desired stability of exchange-rates between gold- and silver-using nations by means of international bimetallic agreements is a noteworthy feature of the negotiations. Even in spite of this, some suspicion that the



proposals cover a desire to do something for silver cannot be wholly put aside. The Mexican delegates certainly included this among their aims, though they were not attempting to raise the gold-value of silver seriously above its actual current value. The solution of the problem of stabilising exchange-rates seems likely to be worked out, in the long run, along lines similar to those put forward in this report, but it is somewhat doubtful whether it will be effected as speedily as the report anticipates. The study of the problem is undoubtedly aided by the action of the American Government, and the collection of documents attached to the report will assist in that study. Mexican foreign trade is developing rapidly, and silver forms a rapidly decreasing proportion of the exports of the country, so that other interests than those of silver-mining are urging the Government towards action which may dissociate the value of the currency from the bullion value of the silver dollar.

The documents printed in the volume include official reports relating to currency reform in the Straits Settlements, in French Indo-China, in the Philippines and elsewhere, and much information bearing on action in this connection, a number of extracts from newspapers being comprised in the matter printed. Professor Jenks, one of the United States Commissioners, is to proceed to China, to endeavour to forward the objects which were set before the various European Commissioners, and it may be that the vigorous action of the United States Government will succeed in securing the adoption of effective measures for setting up a national currency in China more quickly than many of those who have followed with interest the proceedings of this Commission are inclined to anticipate. Whether immediately successful or not, the attempt to secure real and permanent stability of exchange-rates in the trade between gold-using and silver-using nations will undoubtedly secure sympathetic good wishes in this country. Many who were sharply divided in reference to proposals looking to international bimetalism will be united in reference to such proposals as are now put forward for adoption.

A.W.F.

*Finances Contemporaines.* Vol. i: *Trente Années Financières.* 539 pp., 8vo. Vol. ii: *Les Budgets.* 592 pp., 8vo. By Alfred Neymarck. Paris: Guillaumin et Cie., 1903 and 1904. 15 francs.

In these two volumes M. Neymarck has given a fairly detailed account of French finance from the year 1872 onwards. The first volume consists of a chronological history of the principal economic, financial, industrial, and commercial occurrences in France; the second is devoted entirely to a study of the French budgets. He has a happy way of characterising each year by its predominant features—thus, 1875 is *l'année des surprises*; 1882, *l'année du krach*; 1891, *l'année d'avertissements*, and so forth. The past thirty years have been full of importance for France. She has made a wonderful recovery from the war of 1870-71; she has obtained a republican constitution which bids fair to be stable; she has earned the admiration and respect of nations. Yet, curiously enough, from the merely financial and economic point of view, she has shown the

same bad tendencies as her neighbours; since 1892 there has been a strong reaction against the liberal reforms of 1860; her expenditure has increased very greatly, if not at the alarming rate at which English expenditure has increased under the present government. Nevertheless the progress of the past thirty years, though chequered, has been great, and is clearly shown by the credit of the French nation.

The latter of the two volumes—that on budgets—is perhaps the more interesting of the two, particularly because of the tables which it contains, giving comparisons for each year from 1869 of receipts, expenditure, balances, and the dates of the adoption of the various budgets in the Chamber and the Senate, and of the final promulgation of the law, and also of those puzzling “*douzièmes provisoires*,” or laws authorising the collection of taxes and payment of public expenses during a certain number of months.

For those who like figures and bright writing these volumes may be recommended, and although perhaps France is not in every sense the banker of Europe and the universal creditor, we can easily pardon the most praiseworthy patriotism which is exhibited by one of our friends over the Channel.

C.P.S.

*Le travail de nuit des femmes dans l'industrie. Rapports sur son importance et sa réglementation légale.* With a Preface by Etienne Bauer. 384 + xlii pp., 8vo. Jena: Gustav Fischer, 1903. 7.50 francs.

In 1901 the International Association for the Legal Protection of Workers instructed the International Office of Labour to make inquiries on the actual state and the effects of women's nightwork in different countries, and also on the result in industries where nightwork had been suppressed. The report was to bring out the existing differences in the definition of night-time in the different countries and the consequences of their differences. In order to answer these questions the International Office of Labour, of which Professor Bauer is director, sent out an elaborate *questionnaire*; the reports of which this book is composed are the answers to this *questionnaire*, but oddly enough the only persons who have succeeded in giving a series of direct answers to each question are Belgians. It is not easy to see why the representatives of all other nationalities should have been unable to give plain answers to plain questions, but no doubt for some good reason they have preferred to produce reports in their own form. In one civilised country, Japan, there is no legal limitation or prohibition of nightwork. No doubt the reason for this is that the industrial development of Japan has been very rapid and is very recent, for Professor Matsuzaki's report gives a most terrible picture of the factory conditions in Japan. There appears to be a regular system of recruiting young women by false promises; these women are then kept practically as prisoners, but a few succeed in escaping or committing suicide. The hours are long, the wages very small, the food bad and the dormitories dirty. No doubt Japan will soon take steps to remove the stigma of being like England in the times which Lord Beaconsfield

described in *Sybil*. The Osaka employers were ill-advised enough to say that the workers preferred nightwork to daywork, because (1) the factories were too hot in the day but fresh at night in summer, (2) in winter the factories were warm at night, whereas the bedclothes of the workers were scanty, (3) the workers could gain more. Professor Matsuzaki has little difficulty in disposing of these contentions.

Turning to other countries we find that nightwork for women is prohibited in Germany, Austria, France, Great Britain, Italy (from 1907), Holland, Russia, Switzerland, five American States, India, Manitoba, Ontario, Quebec, Nova Scotia, Queensland, Victoria and New Zealand. In Belgium and Portugal it is prohibited for women under 21, in Denmark, Finland, Norway, Sweden and New South Wales for women under 18, in Hungary and Luxemburg for women under 16.

Professor Bauer in his preface gives a useful summary of the result of the inquiry, which is of interest to the general reader. Those who wish more information about any special country can read the report on that country—it may be mentioned that England is ably represented by Miss Anderson, the principal lady inspector of factories, and Mr. G. H. Wood, who is well known to the readers of this *Journal*. Those who wish still more instruction can study the original sources given in the bibliographies appended to the report; thus each class of readers can be satisfied. C.P.S.

*Les industries insalubres. Rapports sur leurs dangers et les moyens de les prévenir, particulièrement dans l'industrie des allumettes et celles qui fabriquent ou emploient des couleurs de plomb.* With a Preface by Etienne Bauer. 460 + lx pp., 8vo. Jena: Gustav Fischer, 1903. 9'50 francs.

At the Brussels International Congress of 1897 M. Henriette, Chief Factory Inspector of Belgium, made a report in which he came to the following conclusions: (1) That it is not necessary to unify the regulations made by different countries relating to dangerous or unhealthy industries; but that it would be desirable to have an international understanding to suppress the great industrial poisons; (2) that international legislation might be adopted to suppress white lead and white phosphorus. This book consists of reports by experts in different countries, made under the direction of the International Office of Labour, on those trades which are unhealthy because of the use of poisons, and especially of those trades which cause phossy jaw and plumbism. Our own feeble attempts to diminish lead poisoning in the potteries will be within the recollection of many of the readers of this *Journal*. The Home Office was easily defeated by the employers. It is therefore of great interest to study the various attempts which other countries have made to deal with evils which are preventible. In the first place it is abundantly clear that repressive legislation alone can prevent the use of poisons or processes which cause horrible illnesses to the workers; no amount of public opinion is any good. A few benevolent and well-meaning persons may be content to buy

matches which are not prepared with white phosphorus, or pottery which is not beautified by leadless glaze; but the majority will remain indifferent to the conditions under which the object which they require are produced. Civilised nations have begun to notice this and to pass various laws with the object of diminishing the pain and suffering caused by some of the processes in dangerous or unhealthy trades; but according to the natural characteristics of nations this legislation either takes the form of general laws or special regulations. The former is the method adapted by France, Belgium, Spain, Holland, and Russia; the latter by Great Britain, Germany, Austria-Hungary, Sweden, and Switzerland. The English method of special rules is well known; it has the merit that each set of rules is specially adapted to deal with a particular evil. The more general method requires some sort of classification which may fail to suit particular trades; but on the other hand the English method allows a dangerous trade to go on until it happens to come to the notice of the Home Office. So far as phossy jaw is concerned there can be little doubt that an international agreement to prohibit the use of white phosphorus would be an excellent thing, but without an agreement a prohibition in one country is open to the objection that other countries then obtain the export trade in phosphorus matches; there is a great demand for such matches in the East. Six countries—Germany, Denmark, Finland, Holland, Switzerland, and Sweden—have, however, prohibited white phosphorus. But of these Sweden only prohibits the use and importation of matches made from white phosphorus, and permits the manufacture for export. This regulation is, of course, not made to protect the workers in match factories, but to prevent a certain obnoxious use of phosphorus matches which had become prevalent. The question of lead poisoning is a much more difficult one; but the evil is more serious because lead poisoning is very frequent amongst persons who work with white lead, especially painters. In France there has been a serious agitation in favour of prohibiting lead paint and substituting zinc paint; and a Commission has reported that this is feasible.

The general observations made above as to *Le travail de nuit des femmes dans l'Industrie* apply equally to this book. C.P.S.

*Women in the Printing Trades.* A Sociological Study. Edited by J. Ramsay Macdonald. xvii + 206 pp. London: P. S. King and Son, 1904. 10s. 6d. net.

The rightful place of woman in the industrial world is a theme which has engaged the attention of a large number of writers on economics and cognate subjects, but here, as in almost all branches of social inquiries, lack of "raw material" has hindered the progress of knowledge, and the sociologist has been compelled to erect his structure of argument on premisses founded on the results of necessarily superficial observation. Hence we find conflicting conclusions reached which leads one to deny the right of woman to compete with man in the industrial world, while another professes not only to vindicate the right of such competition, but the further

right to equal remuneration for similar work. The book under our notice has the signal merit of contributing a valuable addition to that "raw material" for which social writers have so frequently to long in vain, and the manner in which the material showing the actual position of woman in one portion of the industrial world is worked up, causes it to suggest that many of the premisses usually assumed in the discussion of the larger question of the industrial position of women generally, need serious modification in the light of actual facts, and further that the rightful position of women in particular industries should be determined on the merits of the particular case. The position of women in the printing trades is treated briefly from a historical point of view and then their actual position at the present day is discussed with reference to the wages earned, the extent to which the women workers effectively compete with men workers, their industrial training, their organisation, the views of employers and the men workers, with regard to their employment, the economic effect of the contingency of marriage, "women and machinery," the effect of legislation, &c. These questions are discussed in most interesting fashion in the first part of the book. In the second part, the material of which the first part is the outcome is thrown together in the form of appendices which should prove of great value to subsequent investigators as indicating the lines of research pursued in a new field of inquiry and the success attained. Also such appendices permit the critical to test the validity of the conclusions contained in Part I of the book by actual reference to the bases on which they are founded.

Mention should be made of an admirable little preface by Professor F. Y. Edgeworth, briefly indicating some of the more striking results reached in the book.

We learn that the appearance of this book has been followed by the expression of hopes from various quarters that it should be followed by others of a similar character dealing with other trades, and our own perusal of it certainly induces us to indulge in a similar desire.

*Methods of Industrial Peace.* By Nicholas Paine Gilman. x + 436 pp., 8vo. Boston: Houghton, Mifflin, and Co., 1904. 7s. 6d. net.

In this book Mr. Gilman gives a clear and interesting description of the resources at the command of the industrial world for the pacific settlement of disputes. The conflicts of interests in industry reproduce in a very large measure the phenomena observed in the conflicts of national interests. The antagonism of interests which exists, or is believed to exist by the parties interested, between employers and employed—capital and labour, to use the hackneyed phrase—rapidly led, during last century, to efforts on the part of the workmen to combine so as to be able to treat on terms of equality with the single employer, who, with capital and previously with the law on his side, was a "host in himself." Legal restrictions against combination by workmen being removed, the combinations

of workmen in trade-unions now frequently became too formidable to be faced by the single employer. Hence arose the combinations of employers—a phenomenon of quite recent appearance. Devoting two chapters of his book to the tracing of these developments on the part of the “employers” and “employed,” Mr. Gilman describes, defines, and distinguishes in subsequent chapters the various methods employed in the adjustment of disputes. These chapters form, in our opinion, the most valuable part of his book. Labour disputes occupy public attention with great frequency, and at such times the press contains constant reference to such terms as collective bargaining, the sliding scale, conciliation, arbitration—and the two latter are often used indiscriminately. In this book they are both clearly defined and illustrated by examples. Considerable attention is given to the subject of trade and trade-unionism—a difference involving a real distinction—and Mr. Gilman, though writing as an American, remarks that by reason of the comparatively widespread and continuous growth of trade-unionism in England, the best idea of its methods and possibilities is to be obtained by a study of the movement in this country. We note with interest, yet not without some feelings of regret, that while in several countries, notably America, France, and Germany, a method for preserving industrial peace by the appointment of a committee, consisting of the heads of firms and several of the older employes, to whom suggestions or complaints may be referred, has been adopted with very marked success, England appears to have been very slow in following this example. Limitations of space forbid further comment. We may remark, nevertheless, that Mr. Gilman in his preface claims, in describing the methods of industrial peace, to have added an up-to-date contribution to a subject on which only five or six books have been written in our language, and the latest of them is already ten years old. Certainly much of the matter is new to us, and though necessarily in conjunction with a great deal on which numberless volumes have been written—such as trade-unionism—a freshness of interest characterises even that which is old, on account of its setting and connection with matters which will be new to most readers, and makes it read like that which is new.

*The Return to Protection.* By William Smart. 284 pp., 8vo. London: Macmillan and Co., 1904. 5s. net.

This volume, as Professor Smart informs us in his preface, is based on a series of lectures delivered to popular audiences in Glasgow and Edinburgh during the present year. The character of the audience to which the matter was addressed has, no doubt, determined the style; we have not to deal with a formal treatise, unemotional and impersonal, on pure economics, but with a controversial essay to which irony and anecdote are admitted, and in which no attempt is made to disguise the author's predilections.

The opening chapters deal with trade in general and international trade in particular, introducing a statistical discussion on the balance of trade, our “invisible exports,” and the possibility—or impossibility—of “selling securities” as a mode of balance.

We then come to the subject of Protection proper, the principles of a protective tariff, the taxation of raw material and of food. The author argues that protection tends to commercial and political immorality, and that "under Protection, the Government, wishing to benefit its producing classes, delegates the power of taxation to them." Retaliation is discussed, (1) as a means of reducing foreign tariffs, (2) as a cure for "dumping." It is argued as regards (1) that our Executive has not the freedom of initiative necessary for effective retaliation, that tariff wars are costly and ineffective, and that the "most-favoured-nation" clause would prevent any nation giving way to us alone—"With true British conceit we are always thinking ourselves first and other nations nowhere;" as regards (2) the author contends that dumping has many compensations, and that under any circumstances an import duty would be ineffective against the individual importer.

In succeeding chapters the theses are maintained that the country is prosperous and progressing, that Preferential Tariffs are virtually Protection, that the results of the Canadian Preference are disappointing, that the amount of trade which we might in any case take from the foreigner is "quite insignificant," and so forth. "Does not everyone see, indeed," concludes Professor Smart (p. 258), "that the unity we now have has already been perilled by the raising of questions which should never have been raised? Is not the very inquiry we have been forced to make—the gain or loss to us of Preferential Tariffs—one which the true patriot must heartily wish had never been necessary?"

Lucid and readable though it is, we do not think Professor Smart's volume is likely to influence seriously those who support Mr. Chamberlain. The reason does not lie solely in questions of comparative detail—the shortsightedness that sees no truth in the analogy of competition with warfare (p. 6 and p. 210)—the optimism of the belief that Germany is "playing our game" (p. 152) in supplying our shipbuilders with heavy forgings—the exaggeration of the statement "by Protection, a government delegates and gives away its sacred and sovereign power of taxation, and permits certain of its citizens to impose taxes in their own interest" (p. 94). The difference in standpoint is fundamental; the statesman and the ordinary Englishman are nationalists; the economist, as portrayed and exemplified by Professor Smart, is a cosmopolitan. "He would like the boundary walls of empires broken down entirely as regards trade and industry, and the division of labour made territorial. Whether goods come from Ireland or from France is to him the same, so long as they are good and abundant" (p. 47).

To those who require not a complete and judicial study, but a thorough statement of the Free Trade case, the book may be recommended. Professor Smart's work is, as already stated, well and clearly written, brought up to date and illustrated by copious statistics and references to recent controversies. Statisticians who have to deal with shipping statistics may be referred to a useful appendix on that subject.

*American Tariff Controversies in the Nineteenth Century.* By Edward Stanwood. 2 vols., 8vo.: vol. i, xiii + 410 pp.; vol. ii, xiv + 417 pp. Westminster: Archibald Constable and Co., 1904. 18s.

In these two volumes the student of the fiscal question is brought into immediate contact with the detailed history of tariff controversies in America during the nineteenth century. Dr. Stanwood embraces within his exhaustive survey what is practically the whole history of the United States from the Declaration of Independence to the present moment, and during that period tariff controversies, as he shows, have been a very conspicuous feature. From time to time they have been overshadowed by passing questions of the day, but they have remained in the background, and, when those other issues have been solved, or dismissed, they have forced their way again to the forefront of popular discussion and legislative and administrative action. "The tariff has been the most persistent issue in American politics." At the outset of the Republic "the refusal of one or two" of the States to grant to Congress the "power to levy an impost of 5 per cent. was a prominent cause of the breakdown of the Confederation and a strongly contributing, if not the controlling, cause of the formation and adoption of the Constitution." In the last decade of the nineteenth century "the presidential election of 1892 turned mainly on the tariff." The dominance of the slavery question during the struggle between the North and the South, the unanimity of fiscal controversialists in the prosecution of war against external foes, the absorption of the nation in the financial problems raised by the issue of the greenbacks and by the suggestion of the free coinage of silver, have been little more than interludes in the recurring conflicts of the tariff.

This remarkable position, Dr. Stanwood observes, is a natural and indeed a necessary consequence of the federal form of government and of the limited powers of taxation granted by the Constitution. For, while Congress possesses the exclusive right to levy duties on imports, it has no power to use direct taxation except under conditions which involve so great a violation of equality that such a mode of obtaining revenue becomes impossible. It has been tried on three occasions only and on each has practically failed. For all such direct taxes must by the Constitution be assessed on the basis of population. The States can adopt a more equitable and scientific basis, and avail themselves of their opportunity; but Congress is to all intents and purposes limited to customs and excise, and the American people have shown themselves more tolerant of the former than of the latter mode of raising revenue. Until recently internal taxes have been remitted in preference to a reduction of tariff rates. The question has presented itself not so much in the form of a search for an ideal system of taxation, but rather in the more practical shape of determining on what goods should duties be imposed and what should be the rates at which those duties should be levied; and these considerations have necessarily involved an answer to the prior question:— "Should the provision of revenue be alone regarded, or should the



tariff be used as a means of stimulating business and guiding trade into particular directions?" Dr. Stanwood ingeniously argues that, where conditions similar to those obtaining in the United States are present, tariff controversies are bound to occupy a like prominent position, and where such circumstances are absent the controversies have retreated into the obscurity of indifference. The United Kingdom, he observes, is an example of the latter class, while her Colonies, Canada and Australia, afford illustrations of the former. For this reason alone, we may add, the study of the tariff history of the States is not without immediate interest to British students.

Under Dr. Stanwood's guidance they will learn from these pages the character and consequences of the discussions and debates which have preceded, accompanied, and followed the successive changes made in the American tariff. Dr. Stanwood's history is, as he frankly confesses, political rather than economic. It deals with the actual proceedings of Congress and the declared purposes of statesmen rather than with the criticisms or speculations of economists. It does not profess to investigate in any great detail the history of particular industries affected by the tariff. Nor does the author disguise his own strong convictions. He thinks that the aims successively presented by American protectionists have been actually achieved, from the nurturing of "infant industries" in the early days of the Commonwealth to the advocacy of the policies epitomised in the phrases, "diversified interests," the "home market," and the "American system" of later times, until, lastly, the maintenance of the relatively "high rate of wages" has, in our own age, been put forward as the chief and most convincing argument. He says candidly that "readers of the following pages will have no difficulty in discovering that the author believes that tariffs have had a powerful agency in promoting the development, the wealth, and the strength" of the Republic. His bias is certainly evident throughout, but the fact that it is not concealed will enable the impartial student to discount its influence, and we think that Dr. Stanwood is justified when he adds that he "has endeavoured to present the facts so fully and fairly as to give those who take a different view all the materials that history affords for disputing" the position which he adopts. He has certainly afforded abundant matter for the consideration of free trader and protectionist alike. He has presented in an orderly consecutive narrative some important chapters of American history. It would, for example, we imagine, be hard to find anywhere else a more persuasive plea for objects set high in their esteem by most protectionist thinkers of sobriety and intelligence, than the paper drafted by Hamilton in the years which followed Independence, and printed in full in this book. Nor are later incidents, like the McKinley and Dingley Tariff, less fully described. Modifying circumstances, which sometimes added to, and sometimes took away from, the influence of fiscal considerations alone are duly noted as they arise; and, if Dr. Stanwood's conclusions favour the creed he avows, he does not neglect to give the reasons for his faith. Those reasons he finds in the facts which he investigates. He has, in short, made a contribution to the history of the tariff question in the land

where it has been especially prominent, which is no less valuable than it will seem to students in some other portions of the world, like our own country, peculiarly opportune in its appearance.

L.L.P.

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No. 7—Le rôle social des brevets d'invention: Armengaud. La guerre religieuse en France jugée par les Anglais (continued in Nos. 8 and 11): R. de Kérallain.

No. 8—Le Syndicalisme ouvrier: les syndicats à esprit professionnel: G. Fagniez.

No. 9—L'État et les mutualistes: livrets individuels de retraite et subventions: A. Hua. La famille ouvrière: P. Lassale.

No. 10—Les Syndicats professionnels: leur capacité légale et leur avenir: G. Fagniez. Les ressources naturelles de la Province de Québec: J. A. Beaulieu. La situation des populations rurales, d'après les monographies de Communes: R. Lavollée. La mutualité et le principe de liberté ou d'obligation pour l'assurance ouvrière: E. Dedé.

No. 11—Le régime municipal de la France: F. Auburtin. Le Code civil et son centenaire: Hubert-Valleroux. Sur les monographies de Communes rurales: G. Blondel.

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*March*—Quesnay, avant d'être économiste: Schelle. Quesnay anti-mercantiliste et libre-échangiste: A. Dubois. Le Japon industriel: J. P. A. Hahn.

*April*—L'Agriculture anglaise et le protectionnisme: A. Souchon. Les Trusts américains: A. E. Sayons.

*May*—Le travail domestique des femmes, son évaluation économique et sociale: K. Schrimacher. La loi fondamentale de la doctrine sociale de Marx: O. Karmin. L'Exposition municipale à Dresde: M. Zagriatskoff.

*Bulletin de Statistique et de Législation comparée, 1904—*

*February*—Les taxes municipales de remplacement des droits d'octroi en 1903. Germany:—La réforme des impôts directs en Wurtemberg. [Impôt sur le revenu.]

*April*—L'ensemble des opérations des caisses d'épargne privée et de la Caisse nationale d'épargne en l'année 1902. Germany:—L'impôt sur le revenu en Prusse pendant l'année fiscale 1903. Germany:—La proportion des impôts communaux aux impôts d'État dans les principales villes de Prusse.

*May*—Belgium:—Évaluation de la fortune mobilière.

## GERMANY—

*Allgemeines Statistisches Archiv. Band 6, 1904—*

*Halbband 2—Das Bevölkerungsgesetz: Fr. Prinzing.* Die deutsche Handelstatistik in ihrem gegenwärtigen Stand und die Vorschläge zu ihrer Verbesserung: *H. Grimm.* Ueber die Notwendigkeit einer systematischen Organisation der Getreidestatistik: *G. Ruhland.* Ueber die Notwendigkeit systematischer Arbeitsteilung auf dem Gebiete der Bevölkerungs- (Sozial) Statistik. III. Die periodische Ermittlung des Bevölkerungsstandes: *H. Bleicher.* Das Markenklebesystem als statistisch-technisches Verfahren: *Fr. v. Meinzingen.* Die Verwendung des Zählblättchens bei der Volkszählung in Britisch-Indien vom 1 März 1901: *G. v. Mayr.* Der Rückgang der Sterblichkeit in den letzten fünfzig Jahren und seine Bedeutung für das Versicherungswesen: *A. Abel.* Der Selbstmord in den Städten: *H. Rost.* Die Gebärfähigkeit der bayerischen Frauen: *Grassl.* Ein Beitrag zur Statistik der Geburten, insbesondere der Mehrgeburten: *W. v. Kalckstein.* Die Bestimmungen für die Volkszählung im Deutschen Reich vom 1 Dezember 1900: *G. v. Mayr.* Zur Geschichte der niederländischen Statistik: *H. W. Methorst.* Umgestaltungen der amtlichen Statistik der Vereinigten Staaten von Amerika: *G. v. Mayr.*

*Ergänzungsheft—Die deutsche Städtestatistik am Beginne des Jahres 1903 dargestellt nach den Veröffentlichungen der Statistischen Aemter deutscher Städte.*

*Archiv für Sozialwissenschaft und Sozialpolitik. Neue Folge. Band 1, Heft 1, 1904—*Versuch einer Systematik der Wirtschaftskrisen: *W. Sombart.* Die "Objektivität" sozialwissenschaftlicher und sozialpolitischer Erkenntnis: *Max Weber.* Ammons Gesellschaftstheorie: *F. Tönnies.* Die britischen Arbeiter und der zollpolitische Imperialismus: *E. Bernstein.* Die irische Agrarfrage. I. Das heutige Irland: *M. J. Bonn.* Der Entwurf eines preussischen Wohnungsgesetzes, seine Vorgeschichte und seine Bedeutung: *R. Eberstadt.* Die Entwicklung zum Zehnstunden-Tage: *S. Bauer.*

*Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft im Deutschen Reich. Heft 2, 1904—*Das politische Testament Friedrichs des Grossen von 1752: *O. Hintze.* Die Finanzpolitik Wyschnegradskis und Wittes und die gegenwärtige wirtschaftliche Lage Russlands: *T. Schiemann.* Die Entstehung des Staates aus der Geschlechterverfassung bei Tlinkit und Jrokesen: *K. Breysig.* Die Fortschritte der deutschen Arbeiterversicherung in den letzten 15 Jahren: *T. Bodiker.* J. G. Büsch und seine Abhandlung von dem Geldumlauf. II: *H. Sieveking.* Das Beamtentum in Rumänien: *G. D. Creanga.* Die Währungsreform in Österreich-Ungarn: *R. Riedl.* Bericht über die 23 Jahresversammlung des Deutschen Vereins für Armenpflege und Wohltätigkeit: *E. Münsterberg.* Zur Theorie des Sozialliberalismus: *H. U. Kantorowicz.* Das deutsche Volkszählungswerk von 1900: *P. Kollmann.* Eine theoretische Würdigung des landwirtschaftlichen Genossenschaftswesens in Deutschland: *C. Heiss.* Die soziologische Gesellschaft in London: *F. Tönnies.*

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*Jahrbücher für Nationalökonomie und Statistik, 1904—*

*February*—Grenznutzentheorie und Grenzwertlehre (*conclusion*): *W. Scharling*. Ueber den Einfluss des internationalen Kapitalverkehrs auf die Krisen: *R. Liefmann*. Staat und Wirtschaft in Babylon zu Hammurabis Zeit: *R. Thurnwald*. Die Ausdehnung der Alters- und Invalidenversicherung auf den Handwerkerstand: *G. Adler*. Jahresberichte der Kgl. preussischen Regierungs- und Gewerbe- und Bergbehörden für 1902: *Elisabeth Jaffé*.

*March*—Mit welcher Methode wurden die Gesetze der theoretischen Nationalökonomie gefunden?: *Dr. Hasbach*. Die Preisbewegung in Drahtprodukten und Feinblechen in den Vereinigten Staaten während der letzten Jahre: *L. Glier*. Fiskalität und Bureaukratismus: *H. Dieck*. Das neue russische Artelgesetz: *N. Pinkus*. Streik und Aussperrung der Metallarbeiter in Berlin: *J. Croner*.

*April*—Das Depositenbankwesen in Deutschland, mit besonderer Berücksichtigung der Spareinlagen: *O. Warschauer*. Die Errichtung eines ständigen Zählungsamts in den Vereinigten Staaten von Amerika: *Lommatzsch*. Die Verhandlungen über die Roheisensyndikate und den Halbzeugverband in der deutschen Kartellenquete: *R. Liefmann*.

*Zeitschrift für die gesamte Staatswissenschaft, 1904—*

*Heft 1*—Zur erkenntnistheoretischen Betrachtung der Elemente der Gesellschaft, des Staates und der Geschichte (*concluded in next number*): *R. v. Schubert-Soldern*. Zur Frage der Besitzwechsel-, Hypothekar-, sowie Bodenpreis- und Bodenwertstatistik. I. Der derzeitige Stand der fraglichen Statistiken im Deutschen Reich: *F. W. R. Zimmermann*. Neue Beiträge zur Grundlegung der Soziologie: *A. Schäffle*.

*Heft 2*—Albert Schäffle als Soziologe: *O. Spann*. Zur Frage der Besitzwechsel-, Hypothekar-, sowie Bodenpreis- und Bodenwertstatistik. II. Die besonderen Schwierigkeiten für die fraglichen Statistiken: *F. W. R. Zimmermann*. Die internationalen Ursachen der modernen Schutzzollbewegung: *M. Nitzsche*. Zur Statistik der Bücherpreise: *G. Loserth*. Die Baumwollindustrie der Welt nach der Zahl der Arbeitsmaschinen.

*Zeitschrift für Socialwissenschaft, 1904—*

*Heft 3*—Zur Würdigung der historischen Schule der Nationalökonomie (*continued in next numbers*): *G. v. Below*. Mengers volkstümlicher Arbeitsstaat: *F. Oppenheimer*. Die Landwirtschaft der Naturvölker. III (*concluded in Heft 4*): *R. Lasch*.

*Heft 4*—Der Mangel an Generalisationsvermögen bei den Negern: *W. J. Thomas*. Die Säuglingssterblichkeit in Berlin: *G. Heimann*.

*Heft 5*—Die geschlechtlich-sittlichen Verhältnisse im Dienstboten- und Arbeiterinnenstande: *O. Spann*. Kinderarbeit und gesetzlicher Kinderschutz in Österreich und Deutschland: *K. Agahd*. Zum Streit über das Wesen der "Territorialwirtschaft": *G. Kuntzel*.



GERMANY—*Contd.*

*Vierteljahrshefte zur Statistik des Deutschen Reichs. Heft 1, 1904—*

Die Selbstmorde, 1900 bis 1902. Der Verkehr auf den deutschen Wasserstrassen 1872-1902. Bestand der deutschen Kauffahrteischiffe am 1 Jan. 1903. Bei den deutschen Börsen zugelassene Wertpapiere, 1903. Erntestatistik für das Jahr 1903. Weinmost-Ernte 1903. Branntweinbrennerei und -besteuerung 1902-03. Verunglückungen (Verluste) deutscher Seeschiffe 1901 und 1902. Die Schiffsunfälle an der deutschen Küste, 1902.

*Zeitschrift des Königlich Preussischen Statistischen Bureaus. Abt. 1, 1904—*Arbeitsort und Wohnort der Bevölkerung in den Grossstädten und einigen Industriebezirken Preussens am 1 Dezember 1900: *M. Broesike*. Die Zwangsversteigerung land- und forstwirtschaftlicher Grundstücke im preussischen Staate in den Rechnungsjahren 1899 bis 1902: *F. Kuhnert*.

## ITALY—

*Giornale degli Economisti, 1904—*

*March—*Alcune osservazioni sulle attribuzioni di valori in assenza di formazione di prezzi di mercato (*continued in April*): *M. Pantaleoni*. Ricerche matematiche intorno ad alcune rappresentazioni schematiche delle serie statistiche: *T. Bagini*. I lavoratori della cooperazione artigiana nel medio evo: *G. Arias*. Alcune parole sul concetto del credito e sul sistema coloniale: *A. Graziani*. Per alcune riforme del Monte Pensioni degl' insegnanti elementari: *V. Tonni-Bazza*.

*April—*Un preteso difetto delle imposte sui consumi: *U. Gobbi*. I parassiti dello zucchero: *E. Giretti*. Le Istituzioni finanziarie nelle Università israelitiche dell' Emilia: *A. Balletti*. La Banca d' Inghilterra e il tasso dello sconto nel Regno Unito: *G. François*.

*La Riforma Sociale, 1904—*

*March—*L' Economia pubblica veneziana dal 1736 al 1755 (*continued in April*): *L. Einaudi*. L' analisi del Reichstag germanico: *R. Michels*. Il censimento delle abitazioni popolari in Milano: *A. Schiari*.

*April—*Il Giappone finanziario ed economico: *G. Prato*. Razze inferiori e razze superiori: *G. de Gennaro*. Le condizioni dei lavoratori della risaia: *A. Cabiati*.

*May—*L' economia nell' arte: *A. Cabiati*. L' emigrazione periodica dal friuli: *G. Chiap*. La recente fase del Movimento sindacale americano: *C. Cassola*.

*Rivista Italiana di Sociologia. January—February, 1904—*Le cause sociali della Rivoluzione Francese: *G. Salvemini*. La popolazione della Sicilia sotto il dominio spagnuolo: *G. Beloch*. L' idea del diritto e della giustizia nella filosofia dell' evoluzione: *G. Salvadori*. Intorno alle istituzioni sociali dei celti: *F. P. Garofalo*.

## INTERNATIONAL—

*Revue Économique Internationale.* No. 1. March, 1904—Coup d'œil sur l'évolution des doctrines et des intérêts économiques en France: *E. Levasseur*. La politique fiscale de M. Chamberlain: *Sir V. Caillard*. La résurrection du Protectionnisme en Angleterre: *W. S. Churchill and A. Smith*. Les phases typiques des crises économiques et leur histoire (notamment de 1680 à 1903): *G. Schmoller*. Le projet de loi du Gouvernement français sur les Zones franches. La surcapitalisation et les Trusts américains: *G. de Leener*. La construction navale à la fin de 1903. La vie financière: *A. Aupeit*. Chronique industrielle et commerciale. Chronique maritime. La vie scientifique.

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## VI.—Quarterly List of Additions to the Library.

*Additions to the Library during the Quarter ended 15th June, 1904, arranged alphabetically under the following heads:—(a) Foreign Countries; (b) India and Colonial Possessions; (c) United Kingdom and its Divisions; (d) Authors, &c.; (e) Societies, &c. (British); (f) Periodicals, &c. (British).*

The Society has received, during the past quarter, the current numbers—either quarterly, monthly, or weekly—of the periodical official publications dealing with the following subjects:—

**Consular Reports**—From United States and United Kingdom.

**Labour Reports, &c.**—From Austria-Hungary, Belgium, France, Germany, United States, New York State, Canada, New Zealand, and United Kingdom.

**Trade Returns**—From Argentina, Austria-Hungary, Belgium, Bulgaria, China, Egypt, France, Germany, Greece, Italy, Mexico, Netherlands, Russia, Spain, Sweden, Switzerland, United States, India, Canada, and United Kingdom.

**Vital Statistics**—From Argentina, Egypt, Germany, Italy, Netherlands, Roumania, Switzerland, United States (Connecticut and Michigan only), Queensland, South Australia, and United Kingdom.

**Vital Statistics of following Towns**—Buenos Ayres, Buda-Pesth, Brünn, Prague, Brussels, Copenhagen, Berlin, Bucharest, Moscow, Madrid, London, Manchester, Dublin, Edinburgh, and Aberdeen.

The Society has received during the past quarter the current numbers of the following unofficial Periodicals and Publications of Societies, &c., which are arranged under the Countries in which they are issued:—

**Denmark**—Nationaløkonomisk Tidsskrift.

**France**—Annales des Sciences Politiques. Économiste Français. Journal des Économistes. Monde Économique. Polybiblion, Parties Littéraire et Technique. Réforme Sociale. Le Rentier. Revue d'Économie Politique. Revue de Statistique. Journal de la Société de Statistique de Paris.

**Germany**—Allgemeines Statistisches Archiv. Archiv für Sozialwissenschaft und Sozialpolitik. Deutsche Oekonomist. Jahrbuch für Gesetzgebung, Verwaltung, und Volkswirtschaft. Jahrbücher für Nationalökonomie und Statistik. Zeitschrift für die gesamte Staatswissenschaft. Zeitschrift für Sozialwissenschaft. Mittheilungen aus der Handelskammer Frankfurt a. M.

**Italy**—L'Economista. Giornale degli Economisti. Rivista Italiana di Sociologia. Riforma Sociale.

**Sweden**—Ekonomisk Tidskrift.

**Switzerland**—Journal de Statistique suisse.

**United States**—American Journal of Sociology. Banker's Magazine. Bradstreet's. Commercial and Financial Chronicle, with supplements. Engineering and Mining Journal. Journal of Political Economy. Political Science Quarterly. Quarterly Journal of Economics. Yale Review. American Academy of Political and Social Science, Annals. American Economic Association, Publications. American Geographical Society, Bulletin. American Statistical Association, Quarterly Publications. American Philosophical Society, Proceedings and Transactions. Columbia University, Studies in History, &c.

**India**—Indian Engineering. Asiatic Society of Bengal, Journal and Proceedings.

**Canada**—The Chronicle: Insurance and Finance.

**New Zealand**—Government Insurance Recorder. Trade Review and Price Current.

**United Kingdom**—The Accountant. Accountants' Magazine. Athenæum. Automobile Club Journal. Australian Trading World. Bankers' Magazine. Broomhall's Corn Trade News. Browne's Export List. Colliery Guardian. Commercial World. Economic Journal. Economic Review. Economist. Fireman. Incorporated Accountants' Journal. Insurance Record. Investors' Monthly Manual. Investors' Review. Joint Stock Companies' Journal. Labour Co-partnership. Licensing World. Local Government Journal. Machinery Market. Nature. Navy League, Journal. Policyholder. Post Magazine. Produce Markets' Review. Public Health. Publishers' Circular. Sanitary Record. Shipping World. Statist. The Times. Tuberculosis. West Africa. Anthropological Institute, Journal. Cobden Club, Leaflets. East India Association, Journal. Howard Association, Leaflets, &c. Institute of Actuaries, Journal. Institute of Bankers, Journal. Institution of Civil Engineers, Minutes of Proceedings. Iron and Steel Institute, Journal. Lloyd's Register of British and Foreign Shipping, Statistical Tables. London Chamber of Commerce, Journal. London University Gazette. Manchester Literary and Philosophical Society, Memoirs and Proceedings. Royal Agricultural Society, Journal. Royal Asiatic Society, Journal. Royal Colonial Institute, Proceedings and Journal. Royal Geographical Society, Geographical Journal. Royal Irish Academy, Proceedings and Transactions. Royal Meteorological Society, Meteorological Record and Quarterly Journal. Royal Society, Proceedings. Royal United Service Institution, Journal. Sanitary Institute, Journal. Society of Arts, Journal. Statistical and Social Inquiry Society of Ireland, Journal. Surveyors' Institution, Professional Notes and Transactions. Trade Circulars.

#### (a) Foreign Countries.

##### **Argentine Republic**—

Anuario de la Direccion General de Estadistica. Año 1902. 2 vols., 8vo. 1903 .....	} The Director-General of Statistics
[Vol. 1, Trade and Navigation Returns for 1902. Vol. 2, Internal Trade, Education, Immigration, Railways, &c.]	
Agricultura. Ministerio de. Boletín mensual de Estadística y Comercio. Enero 1904. 24 pp., 8vo.	} The Ministry of Agriculture

## (a) Foreign Countries—Contd.

**Argentine Republic—Contd.**

- Ferrocarriles.** Estadística de los, en explotación. Años 1899 y 1900. 2 vols., 8vo. .... } Mr. J. Scott Keltie
- Buenos Ayres (Province).** Dirección General de Estadística. Boletín mensual. (Current numbers) } The Provincial Statistical Bureau
- Buenos Ayres (City).** Annuaire Statistique de la Ville. 13<sup>e</sup> Année, 1903. Diagrams, 8vo. .... } The Municipal Statistical Bureau
- Argentine Year-book, 1903.** Maps and plates, 8vo. } The South American Publishing Co.
- Buenos Aires, 1904** ..... }
- [General and Statistical information well up to date. Selections from the Customs Tariff for 1902 are also included.]

**Austria-Hungary—**

- Ackerbau-Ministeriums.** Statistisches Jahrbuch des k.k. (Current numbers.) 1903 ..... } The Ministry of Agriculture
- Arbeitsstatistisches Amt.** Protokolle der 16<sup>ten</sup> und 17<sup>ten</sup> Sitzungen des Arbeitsrates, 1903. 8vo. .... }
- Arbeitsstatistisches Amt.** Bericht über die Tätigkeit des K.K., während 1903. 27 pp. 8vo. .... }
- Arbeitszeit-Verlängerungen** (Überstunden) in 1903 in fabrikmässigen Betrieben. 33 pp. 8vo. .... }
- Arbeitseinstellungen und Aussperrungen in Österreich** während des Jahres 1902. 8vo. .... }
- [Strikes and Lock-outs in Austria.]
- Stenographisches Protokoll** ... der im K.K. Arbeitsstatistischen Amte durchgeführten Vernehmung von Auskunftspersonen über die Verhältnisse im Schuhmachergewerbe. 4to. 1904 ..... }
- Wohlfahrts-Einrichtungen der Arbeitgeber zu Gunsten ihrer Angestellten und Arbeiter in Österreich.** II Teil. Wohlfahrts-Einrichtungen der gewerblichen und Handelsbetriebe. ix + 414 pp. 8vo. 1904 ..... }
- Berufstatistik nach den Ergebnissen der Volkszählung** 31 Dec., 1900. Hefte 5 & 8. Fol. .... }
- Eisenbahnen.** Statistik der elektrischen, Drahtseilbahnen ... für 1902. 8m. 4to. .... }
- Grundbesitzstatistik.** Ergebnisse der, nach dem Stande 31 Dec., 1896. Heft 4. Fol. .... }
- Handel.** Statistik des Auswärtigen Handels des Österr. Ungarischen Zollgebiets im Jahre 1903. Band II, Spezial-Handel. Band III, Vormerkverkehr. Durchfuhr. 2 vols., 8vo. 1904 ..... }
- Roheisen,** Das, unter Mitberücksichtigung seiner weiteren Verarbeitung. 1 Teil. Die einzelnen Produktionsländer (2 Lieferung). 760—280 pp., la. 8vo. 1904 ..... }
- [Production of Pig Iron in different Countries, and General International statistics of the Iron Trade back to 1892.]
- Mittheilungen des K.K. Finanz-Ministeriums.** Jahrgang 8, Hefte 3 und 4, 1902. Jahrgang 9, Hefte 1—4, 1903. Jahrgang 10, Heft 1, 1904. 7 vols., diagrams, 8vo. .... }
- Österreichisches Wirtschaftspolitisches Archiv.** (vormals "Austria"). (Current numbers.) 8vo. .... }
- Statistische Monatschrift.** (Current numbers) .... }
- Statistische Nachrichten aus dem Gesamtgebiete der Landwirtschaft.** (Current numbers) .... }
- Tabellen zur Währungs-Statistik.** 3<sup>e</sup> Ausgabe. 3 Heft. Abschnitt 6. Industrielle Edelmetallverwendung. Nachtrag. Ausmünzungen 1903. Fol. } The Ministry of Finance

(a) *Foreign Countries—Contd.***Austria-Hungary—Contd.**

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|---|--------------------------------------|
| Volkzählung, 31 Dec., 1900. Ergebnisse der, Heft 4. Zählung der Arbeitslosen in den Gemeinden der Erweiterten Wohnungsaufnahme. Fol. .... | } The Central Statistical Commission |
| [Census of Unemployed, 1900.]   |                                      |
| Hungary. Annuaire Statistique Hongrois. Nouveau Cours. X. 1902. La 8vo. ....  | } The Central Statistical Bureau     |
| Budapest. Monatshefte des Budapester Communal-Statistischen Bureaus. (Current numbers) .....  |                                      |

**Belgium—**

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| Bulletin du Service de Santé et de l'Hygiène publique. (Current numbers) .....   | } The Belgian Legation                  |
| Budgets des Recettes et des Dépenses pour l'Exercice 1904. Fol. ....   |   |
| Chemins de fer, postes, télégraphes, téléphones et Marine. Compte rendu des opérations pendant 1901. Map, fol. ....  | } Mr. J. Scott Keltie                   |
| Mines. Annales des. (Current numbers) .....  |   |
| Recensement Général des Industries et des Métiers (31 Octobre 1896). Exposé général des méthodes et des résultats. xii + 440 pp. Diagrams, &c., 4to. Statistique des Salaires dans les Mines de Houille (Octobre 1896—Mai 1900). 104 pp. 4to. 1901 | } Prof. E. Waxweiler                    |
| Statistique médicale de l'Armée belge. Année 1902. 8vo. 1903 .....   |   |
| Académie Royale de Belgique. Bulletin de la classe des lettres. . . 1904. (Current numbers) .....  | } The Belgian Government<br>The Academy |

**Brazil—**

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| Importacao e Exportacao . . . 1902. Fol. 1904 ..... | } The Bureau of Statistics |
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**China—**

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| Customs Gazette. (Current numbers) .....   | } Sir Robert Hart,<br>Bart., G.C.M.G. |
| List of Lighthouses, &c., for 1904. Maps, 4to. ....  |                                       |
| Medical Reports for half-year ended 31 Mar., 1903. 65th Issue. 4to. 1904 .....   |                                       |
| Returns of Trade and Trade Reports for 1903. Part 1, Report on Trade of China, and Abstract of Statistics. 4to. 1904 ..... |                                       |
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**Cuba—**

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| Comercio Exterior. July—September, 1903. 4to ...   | } The National Library<br>of Cuba |
| Estacion Central Meteorologica . . . Boletin correspondiente . . . April—Dec., 1903. La fol. ....          |                                   |
| Informe mensual sanitario y demografico. Feb.—Dec., 1903. 8vo. ....  |                                   |
| Informe del Superintendente de escuelas . . . 1902. Tome 1. 8vo. ....                                      |                                   |
| Memoria de los trabajos realizados por la intervencion general del estado durante 1902-1903. 107 pp., 8vo. |                                   |
| Movimiento de Población. Ano de 1902. 114 pp., 4to.  |                                   |
| Riqueza Agricola-Industrial. (Años 1901-02 y 1902-03) y Riqueza Forestal (Año 1902-03). 4to. . .           |                                   |
| Riqueza Minera. Septiembre 1903. Diagrams. 4to.  |                                   |
| Havannah—  |                                   |
| Contribucion al Estudio de la Escarlatina en la Habana. 63 pp., 8vo. 1904 .....                            |                                   |
| Presupuesto de Gastos e Ingresos ordinarios y extraordinarios, año 1903-04. 386 pp. Fol. ....              |                                   |

(a) Foreign Countries—*Contd.***Egypt—**

- Commerce extérieur de l'Égypte pendant 1903. 8vo. { The Director-General of Customs  
 Reports on Finances, Administration, and Condition of Egypt and the Soudan in 1903. [Cd. 1951]. Fol. } Purchased

**France—**

- Agriculture. Ministère de l'. Bulletin mensuel de l'Office de Renseignements agricoles. (Current numbers.) 8vo. .... The Ministry of Agriculture  
 Budget général de l'Exercice 1903. 13 parts. 4to. .... Mr. J. Scott Keltie  
 Chemins de fer français. Statistique des, au 31 Dec., 1901. Documents divers, 2<sup>e</sup> Partie, Intérêt local et tramways. France et Algérie. 4to. .... The Ministry of Public Works  
 Finances, Ministère des. Bulletin de Statistique et de Législation comparée. (Current monthly numbers) The Ministry of Finance  
 Justice civile et commerciale. Compte général de l'administration de la, pendant 1901. 4to. .... The Ministry of Justice  
 Mouvement de la Population. Statistique annuelle du, année 1902. Tome 32. 8vo. ....  
 Travail. L'Industrie du chiffon à Paris. vi + 110 pp., 8vo. 1903 The French Labour Department  
 Travail. Conseil Supérieur du Travail. 12<sup>e</sup> Session (Nov., 1903). Compte-rendu. 4to. ....  
 Colonies. Statistiques Coloniales pour 1902. Commerce. 8vo. .... The French Colonial Office  
 Paris. Résultats Statistiques du Dénombrement de 1901. 154 pp., 8vo. .... Dr. J. Bertillon

**Germany—**

- Ämtliche Nachrichten des Reichs-Versicherungsamts. 20 Jahrgang. No. 1, 1904 (contains—A Unfallversicherung für 1902; Invalidenversicherung für 1902). No. 4 (contains—Geschäftsbericht des Reichs-Versicherungsamts für 1903). 4to. 1904 ... The Imperial Insurance Bureau  
 Ämtliche Nachrichten des Reichs-Versicherungsamts, 1903. 2 Beiheft. Statistik der Ursachen der Erwerbsunfähigkeit (Invalidität) nach dem Invaliditäts und Altersversicherungsgesetz für die Jahre 1896 bis 1899. 8vo. 1904  
 Deutsches Handels-Archiv. February-December, 1903. 11 parts, 4to. 1903 Mr. J. Scott Keltie  
 Gesundheitsamtes. Veröffentlichungen des Kaiserlichen. (Current numbers) The Imperial Health Bureau  
 Reichstagswahlen von 1903. Allgemeine Statistik der. Teil 2. Diagram, 4to. 1904  
 Streiks und Aussperrungen im Jahre 1903. 4to. 1904 The Imperial Statistical Bureau  
 Vierteljahrshefte zur Statistik des Deutschen Reichs. Jahrgang 1904. Heft 1. 4to.  
 Statistisches Jahrbuch Deutscher Städte. Jahrgang 11. 8vo. 1903 Purchased  
 [Municipal Statistics of 52 German Towns.]

**Prussia—**

- Geburten, Eheschliessungen und Sterbefälle während 1902. (183.) Fol. 1903  
 Heilanstalten im preussischen Staate während des Jahres 1901. (182.) Fol. 1903 The Royal Prussian Statistical Bureau  
 Sterblichkeit nach Todesursachen, &c., während 1902. (184.) Fol. 1904  
 Zeitschrift des K. Preussischen Statistischen Bureau. (Current numbers)

## (a) Foreign Countries—Contd.

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*Saxony.* Zeitschrift des K. Sächsischen Statistischen } The Statistical Bu-  
Bureaus. (Current numbers) ..... } reau of Saxony

*Württemberg—*

Statistisches Handbuch. Jahrgang 1901. Map, la. }  
8vo. .... } Mr. J. Scott Keltie

Württembergische Jahrbücher für Statistik und }  
Landeskunde. Jahrgang 1903. 2 vols. 4to. .... } Purchased

*Berlin.* Berliner Jahrbuch für Handel und Industrie. }  
Bericht der Ältesten der Kaufmannschaft von Berlin. }  
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SEPTEMBER, 1904.

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LOCAL EXPENDITURE *and* LOCAL INDEBTEDNESS *in* ENGLAND  
*and* WALES.

By R. J. THOMPSON.

[Read before the Royal Statistical Society, 17th May, 1904.]

MAJOR PATRICK GEORGE CRAIGIE, C.B., President, in the Chair.]

THE cost of our English local government is a subject which has in recent years been so frequently and so thoroughly discussed, that I feel some hesitation in inviting attention on the present occasion to a question which, notwithstanding its perennial interest, may perhaps be thought to be somewhat worn. My apology for doing so, however, is the fact that though many special aspects of our local taxation have been discussed before this Society, it would be necessary to go back as far as 1877, when our distinguished President read what was, I believe, his first paper before this Society,<sup>1</sup> to find an instance of any attempt to review the growth of local expenditure and indebtedness in England and Wales as a whole. The broad issues were, it is true, dealt with by Lord Avebury's presidential addresses in 1901,<sup>2</sup> and Sir Henry Hartley Fowler's presidential address on Municipal Finance and Municipal Enterprise<sup>3</sup> referred to the outlay incurred by the great urban authorities, while papers on our poor law system and on the finances of certain towns have at other times brought particular aspects of the question prominently before you. My present object, however, is not so much to refer in detail to any special branch of outlay or revenue, as to give as far as possible something like a broad outline of the magnitude of the total sum of money which

<sup>1</sup> *Journal of the Royal Statistical Society*, 1877, part ii.

<sup>2</sup> *Ibid.*, 1901, part iv.

<sup>3</sup> *Ibid.*, 1900, part iii.

passes annually through the hands of our popularly elected bodies at the present time as compared with earlier years.

The rapid growth in recent years of the expenditure and debt of local authorities in England and Wales is primarily attributable to those legislative changes which have enlarged the scope of the functions Parliament requires or permits local bodies to perform, and also to the demands of an increasing population.

The expenditure is divided in the Local Taxation Returns according to the purposes to which it is applied, but the principal of loans repaid and interest—very large items—are not analysed,<sup>4</sup> so that any comparison of the sums spent must be confined in most cases to the direct outlay, exclusive of these amounts, which must be stated separately.

The headings under which I have grouped the various items are: (1) poor law relief and lunatic asylums; (2) education; (3) police; (4) highways, bridges, and public lighting; (5) various beneficial works; (6) reproductive works; and (7) other expenses. The figures relating to poor law relief and education are available for many years past, but for the other items the year 1884-85 is the first in which the amounts are distinguished with any completeness.

#### (1.) *Poor Relief and Lunatic Asylums.*

The total expenditure on poor relief in 1869-70 was 7,644,000*l.* Thirty years later, in 1899-1900, it amounted to 11,568,000*l.*, an increase of rather over 51 per cent., while in 1902 a total of 12,891,000*l.* was reached. During the first ten years of this period the increase was under 5 per cent., in the next ten years it was about 5½ per cent., while during the decade ending 1899-1900 the charge rose by no less than 37 per cent., and the last two years have seen a further augmentation of 11½ per cent.

The Local Taxation Returns subdivide this expenditure under six heads, viz., (a) In-maintenance, (b) Out-relief, (c) Maintenance of Pauper Lunatics, (d) Salaries, (e) Loans, and (f) Other Expenses. The charge for "in-maintenance" covers all expenses connected with relief in workhouses, &c., exclusive of repairs and salaries and rations of officers. It includes the maintenance of vagrants in vagrant wards. "Out-relief" covers all relief in money or kind outside workhouses. "Maintenance of lunatics" includes the full sum charged by asylum authorities, including the salaries of their officers. "Salaries" includes remuneration, rations, and superan-

<sup>4</sup> In the returns since 1899-1900, the repayments and interest are distinguished as far as practicable, but there is a considerable balance still remaining which cannot be allocated. The information is, however, partially available for earlier years in the case of poor relief and education.

nuation allowances of officers and servants. "Loans repaid and interest thereon" covers payments by guardians and poor law authorities, but not debt charges on lunatic asylums, which, together with the provision and upkeep of these institutions, falls, by the Consolidating Lunacy Act, 1890, on county and borough councils. "Other expenses" include repairs, maintenance of paupers in hospitals and certified schools, and miscellaneous expenses which cannot be apportioned.

The charges falling under these heads at intervals of five years, from 1869-70 to 1899-1900, with the two subsequent years, are shown in the following table. The figures include the expenditure of the Metropolitan Asylums Board on hospitals for infectious diseases.

TABLE I.—Principal Items of Expenditure for Poor Relief.

[In thousands.]

1	2	3	4	5	6	7	8
Years (ending Lady-day).	In-Maintenance.	Out-Relief.	Maintenance of Lunatics in Asylums and Licensed Houses.	Salaries and Bations of Officers, and Super-annuation Allowances.	Workhouse and other Loans Repaid, and Interest thereon.	Other Expenses immediately connected with Relief.	Total.
	£	£	£	£	£	£	£
1869-70 ....	1,503,	3,633,	723,	818,	252,	715,	7,644,
'74-75 ....	1,578,	2,959,	859,	930,	267,	896,	7,488,
'79-80 ....	1,758,	2,711,	994,	1,053,	319,	1,180,	8,015,
'84-85 ....	1,922,	2,470,	1,188,	1,357,	502,	1,053,	8,492,
'89-90 ....	1,900,	2,454,	1,222,	1,395,	605,	859,	8,434,
'94-95 ....	2,216,	2,531,	1,502,	1,667,	698,	1,253,	9,867,
'99-1900 ....	2,548,	2,698,	1,820,	2,095,	973,	1,433,	11,568,
1900-01 ....	2,802,	2,722,	1,874,	2,213,	1,018,	1,492,	12,120,
'01-02 ....	2,979,	2,836,	2,045,	2,358,	1,065,	1,608,	12,891,

The mean number of paupers of all classes decreased from 1,033,000 in 1869-70 to 802,000 in 1901-02, or, relatively to the population, from 46 per 1,000 to 24.6 per 1,000, while the average cost per pauper rose from 7*l.* 8*s.* to over 16*l.* 1*s.* per head. The subdivision of the charges in the above table enables us to examine in some detail the items to which this increased outlay is to be attributed.

(a) *In-maintenance.*

But little variation has occurred in the proportion of in-door paupers to the population during the past thirty years, the figure being roughly about 7 per 1,000 over the whole period. The mean

number, however, receiving relief has risen from 157,000 in 1869-70 to 224,000 in 1901-02; and to this some part of the addition of nearly 1,500,000*l.* to the charge for in-maintenance shown in col. 2 must be attributed. Only part, however, of the increase is due to this cause, as the average cost per in-door pauper has risen from 9*l.* 12*s.* to 13*l.* 6*s.*, or by 38½ per cent. (see Table II). The fluctuations have been considerable, but the amount in 1901 and 1902 was much above that of previous years, the outlay having risen by about 1*l.* 10*s.* per head in the past two years. The absence of any decrease in the proportion of in-door paupers is perhaps partly due to the extent of the provision for in-maintenance, which probably renders the workhouse more acceptable than was formerly the case. In this connection Mr. Lockwood, one of the Local Government Board Inspectors, in his Report for 1898,<sup>5</sup> observes that "there is an increasing number of workhouse inmates who, though perhaps incapable of earning a full wage, could not reasonably be classed as infirm through age or other cause; and it is possible that the comforts and indulgences now generally afforded to the in-door poor may in some cases at least offer inducements to remain chargeable, rather than to renewed effort to earn an independent living." When it is remembered that the fundamental principle of the poor law is that the condition of the pauper should be less eligible than that of the independent labourer, any increase in the expenditure on maintenance leading to the above result cannot be regarded as entirely satisfactory. Mr. Lockwood also observes that "the dress and general appearance in many instances of the relatives and friends of the patients in the wards of infirmaries on visiting days suggest that not a few of the latter are recruited from a class far removed from destitution, the status which was understood to be the condition entitling to relief from the rates in this or any other form when separate poor law infirmaries were first established."

As stated above, the charge for in-maintenance is exclusive of repayments of loans and interest, salaries, and other expenses; but, so far as these could be apportioned, their addition would have raised the total expense in connection with the administration of in-door relief in 1901-02 to no less than 6,284,000*l.*<sup>6</sup> This is equal to an outlay of about 28*l.* per head.

#### (b) *Out-Relief.*

In the case of out-relief there has been a fall in the mean number of paupers (excluding lunatics in asylums) from an average of 848,000 in 1869-70 to 501,000 in 1901-02, or from about

<sup>5</sup> "Local Government Board Report," 1898-99, p. 86.

<sup>6</sup> *Ibid.*, 1902-03, p. xcv.



37 to 15 per 1,000, accompanied by a rise in the cost per head from 4*l.* 7*s.* to 5*l.* 12*s.* The smaller number of persons now receiving out-relief, especially in view of the increasing population, is a matter for congratulation, while the increase in the amount per head must be attributed to the fact that the ample relief of such applicants as are deemed suitable objects for out-relief is now regarded as a desirable method of poor law administration. Mr. Preston-Thomas, in his Report for 1899-1900, says, "I am constantly urging boards of guardians, in every case where out-relief is granted, to provide adequately for the applicants' maintenance . . . It is, however, a much easier plan to give a small dole to everybody, instead of thoroughly inquiring into the circumstances, and discriminating between those who deserve liberal out-relief and those to whom only the workhouse should be offered." The same inspector observes that, "in unions where relief is dispensed without much inquiry, the result is to create a class of applicants who ask for relief, not because they are destitute, but because others no worse off than themselves have been successful in obtaining it. Nothing spreads so fast as pauperism unchecked. And the energy shown in attempting to get 'parish pay' is often so assiduous that one could wish it were devoted to wage-earning." The additional expense for salaries, &c., in connection with out-relief raised the total outlay in 1901-02 to 3,346,000*l.*<sup>8</sup>

The following table gives the number of paupers of each class and the cost per head at intervals since 1869-70 :—

TABLE II.—*Mean Number of Paupers in England and Wales, and Cost per Head.*

Years (ending Lady-day).	Mean Number of Paupers.			Cost per Head.		
	In-door.	Out-door, exclusive of Lunatics in Asylums.	Lunatics in Asylums.	In-Maintenance.	Out-door Relief.	Lunatics in Asylums.
1869-70 ....	156,800	847,900	28,000	£ 9·6	£ 4·3	£ 25·8
'74-75 ....	146,800	621,800	32,300	10·8	4·8	26·6
'79-80 ....	180,800	588,000	39,200	9·7	4·6	25·3
'84-85 ....	183,800	538,600	46,500	10·5	4·6	25·5
'89-90 ....	187,900	535,500	51,800	10·1	4·6	23·6
'94-95 ....	208,700	527,600	60,600	11·1	4·8	24·8
1899-1900	215,400	505,000	72,000	11·8	5·3	25·3
1900-1901	214,000	493,700	73,900	13·1	5·5	25·3
'01-1902	224,000	501,500	76,400	13·3	5·6	26·8

<sup>7</sup> "Local Government Board Report," 1899-1900, p. 106.

<sup>8</sup> *Ibid.*, 1902-03, p. xvi.

*(c) Maintenance of Pauper Lunatics.*

There has been a great increase in the number of lunatics in asylums, but the cost per head, though fluctuating, has not materially altered. This increase in numbers is no doubt due to the Government grant of 4s. per week for every pauper lunatic, a grant which "has induced boards of guardians to send to the county " and borough asylums chronic lunatics and imbeciles who have not " required the expensive treatment afforded by these institutions."<sup>9</sup> The gross charge under this head has risen from 723,000*l.* in 1869-70 to 2,045,000*l.* in 1901-02. This includes charges for staff, victualling, and all expenditure coming under the head of "main-  
"tenance of patients," and is recovered by means of a weekly charge from the unions to which these pauper lunatics are chargeable. In addition, there is the charge for the provision and upkeep of lunatic asylum buildings, together with the payments for interest and repayment of loans in connection with them which fall on county and borough funds. The repayments of loans and interest were in the latest year named about 400,000*l.*

*(d) Salaries, &c.*

Turning to the item of salaries in Table I (col. 5), the outlay is now nearly three times as much as it was in 1869-70. Comparing the year 1880 with 1870, the increase was 28 per cent., the succeeding ten years saw an increase of 32 per cent., while 1900 showed a rise of 50 per cent. over the total of 1890. The two subsequent years have seen a further augmentation of 13 per cent. The additional grant of the whole of the provincial union officers' salaries, which became payable out of the Imperial Exchequer by the Local Government Act of 1888, has thus been accompanied by a very substantial addition to the cost of administration. The charge for salaries is, of course, much greater in those unions where a large proportion of the paupers are relieved in the workhouse, but the divergence in the relation between salaries and the cost of relief in different unions is sufficiently striking to deserve mention. For instance, while there are unions in which the salaries exceed one half of the outlay on maintenance, in others it is under one fifth. Thus in the ten unions of Manchester, West Derby, Birmingham, Sheffield, Chorlton, King's Norton, Brighton, Croydon, Edmonton, and Brentford, the charge both for in-maintenance and out-relief was in 1899-1900<sup>10</sup> 304,608*l.*, and for salaries 174,254*l.*, or 57 per cent., while the number of paupers was 38,426, giving an average

<sup>9</sup> "Royal Commission on Local Taxation," Final Report, p. 25.

<sup>10</sup> *Ibid.*, Appendix to Final Report, Table IX. Digitized by Google

charge for salaries per head of 4*l.* 11*s.* On the other hand, if we take the ten Unions of Wigan, Ashton, Middlesbrough, Chesterfield, Leicester, Dudley, Grimsby, Auckland, Northampton, and Newton Abbot, the expenditure was 192,300*l.*, and the charge for salaries 35,600*l.*, or about 18 per cent. The number of paupers was 31,283, so that the average cost was about 23*s.* per head. In the first case, however, the average number of in-door paupers was 52 per cent. of the total number, and in the second case only 19 per cent. This of course accounts for the difference in the proportionate cost of salaries, but the two sets of figures serve to show the remarkable divergence in the methods pursued by the guardians in different unions.

(e) *Outstanding Debts.*

The outstanding debts on workhouses, including the fever and small-pox hospitals belonging to the Metropolitan Asylums Board, and on lunatic asylums are as follows:—

	Workhouses, &c.*	Lunatic Asylums.
	£	£
1884-85 .....	6,361,000	3,326,000
'89-90 .....	7,037,000	3,557,000
'94-95 .....	7,773,000	4,263,000
'99-1900 .....	10,793,000	6,320,000
1900-1901 .....	11,824,000	7,037,000
'01-1902 .....	13,170,000	8,248,000

\* Including, in addition to workhouses, infirmaries, poor law schools, and offices, the asylums and hospitals provided by the managers of the Metropolitan Asylums District. These include hospitals (not restricted to pauper patients) which have been provided for persons suffering from fever, diphtheria, and small-pox. Outside the metropolis hospitals of this character are usually provided and maintained by the urban and rural district councils. This expenditure is not strictly for poor law purposes, but in the earlier years the particulars cannot be separately shown.

The increase in both cases since 1894-95 has been remarkable, being in the case of workhouses, &c., about 70 per cent., while in the case of lunatic asylums the charge has nearly doubled. The sum defrayed from the rates for principal and interest on workhouse loans alone rose from 502,000*l.* in 1884-85 to 1,065,000*l.* in 1901-02. No doubt much of this debt is due to the need for replacing old buildings which have been in use for many years, but the figures suggest the inquiry whether this is not being done on somewhat too lavish a scale or somewhat too rapidly.

*(2) Education.*

Under the heading of education may be included expenses of school boards, school attendance committees, reformatories and industrial schools and expenditure on technical and intermediate education. The legislative changes which have been made during the past thirty years in addition to very largely increasing the contributions from the imperial exchequer, have thrown the duty of providing primary education upon local authorities, and have also placed at their disposal the "residue" of the local taxation customs and excise duties, otherwise known as the "whisky money," which may at their option be employed in providing instruction of a technical or secondary character.

Elementary education first became a charge on the local rates in 1870, when local school boards were required to be established in those districts where the existing voluntary schools were insufficient. These school boards were empowered to levy a rate to meet their expenses, so far as they were not provided for by the grants from the education department and by receipts from other sources. In 1876 the principle was laid down that every parent was bound to cause his child to receive efficient elementary instruction in reading, writing, and arithmetic, a provision which materially increased the demand for school accommodation, a large proportion of which demand had to be satisfied by the erection of board schools. But in examining the educational expenditure falling on the local rates, it is necessary to remember that notwithstanding the very great increase in board schools, only 47 per cent. of the scholars on the registers of public elementary schools in 1901 were in board schools, so that up to that time the local ratepayer as such contributed to the cost of education of less than one-half of the children receiving that description of education in England and Wales. The passing of the Education Act of 1902 has transferred to the county and borough councils the financial control both of these school boards and of voluntary schools, and the number of separate authorities has been reduced from 2,566 to 333. The changes introduced by this Act do not, however, affect the figures in the following table, which shows the expenditure and outstanding loans of school boards up to September, 1902 :—

TABLE III.—*School Boards in England and Wales.\**

Year ending September,	Expenditure not Defrayed Out of Loans.			Outstanding Loans
	General.	Debt Charges.	Total.	
	£	£	£	£
1879 .....	3,258,000	437,000	3,695,000	9,937,000
'89 .....	3,822,000	994,000	4,816,000	18,138,000
'94 .....	5,430,000	1,309,000	6,739,000	22,533,000
'99 .....	7,472,000	1,691,000	9,163,000	29,353,000
1900 .....	7,945,000	1,770,000	9,715,000	30,813,000
'01 .....	8,513,000	1,887,000	10,400,000	32,207,000
'02 .....	8,988,000	2,022,000	11,010,000	33,564,000

\* Abstract of Accounts, Cd-1276, 1902, and Board of Education Report, 1902-03.

Taking the expenditure as a whole, it increased from 3,695,000*l.* in 1879 to 4,816,000*l.* in 1889, and in the next decade to 9,163,000*l.*, while the three subsequent years, for which figures are available, show a further growth to nearly 11,000,000*l.* Towards this outlay the Government contributed 14 per cent. in the earlier year, 28 per cent. in 1889, and nearly 40 per cent. in the later years. The cost of erecting school buildings has increased the outstanding loans during these years from 9,937,000*l.* to 33,564,000*l.* It should perhaps be pointed out that of the total expenditure about 29 per cent. was expended by the London School Board, while the number of children receiving education in their schools was only one-fifth of the whole. This is accounted for by the fact that the average cost of maintenance per scholar in 1901-02 was very much higher than elsewhere, viz., 4*l.* 1*s.* 3*d.* per head, as compared with an average cost in the counties of England and Wales (excluding London) of 2*l.* 13*s.* 6*d.*, and in the county boroughs (including London) of 3*l.* 6*s.* 6*d.* per head. The outstanding debt in London was very nearly one-third of the whole.

In order, however, to form some idea of the relation between the cost and the number of children educated, it will be well to take the figures given by the Board of Education showing the number of scholars receiving elementary education in Board Schools, and the average cost per head for "maintenance," that is excluding cost of buildings, expenses of administration, repayment of loans and some other charges. These particulars will be found in Table IV.

TABLE IV.—*Number of Scholars at Board Schools, Cost per Scholar, and Government Grant.\**

Years (ending 31st August).	Number of Scholars in Average Attendance.	Average Expenditure per Scholar on Maintenance only.	Average Government Grant per Scholar.†	Average Contribution from Local Rates.	Percentage Contributed by the Government.
	Thousands.	£ s. d.	£ s. d.	£ s. d.	
1874-75.....	227,	1 16 11	— 7 6	1 — 6	20·1
'79-80.....	769,	2 2 0	— 13 10	— 18 7	32·9
'84-85.....	1,187,	2 5 4	— 16 5	— 19 —	36·2
'89-90.....	1,457,	2 6 —	— 18 7	— 18 —	40·3
'94-95.....	1,879,	2 10 2	1 9 7	— 19 8	58·9
'99-1900..	2,177,	2 17 8	1 11 2	1 5 6	54·0
1900-1901....	2,239,	3 — 2	1 11 2	1 8 2	51·8
'02.....	2,344,	3 — 9	1 10 8	1 9 5	50·5

\* Statistics of Public Elementary Schools, 1901-02. [Cd-1476.]

† Excluding the "Necessitous School Boards Grants."

Exclusive, therefore, of buildings and certain other expenses, the direct expenditure on education was 37s. in 1874-75, and 42s. per head in 1879-80; ten years later, in 1889-90, it was 46s., an increase of 9½ per cent., while the next decade ending 1899-90 showed an increase of 25 per cent., bringing the charge per head up to 57s. 8d., and in 1902 it rose to 60s. 9d. During this period, in consequence of successive enactments, the grants made by the Education Department advanced from 13s. 10d. in 1879-80 to 18s. 7d. in 1889-90, and then to 30s. 8d. in 1902. It cannot be said, however, that the enormously increased liberality of Parliament in this direction has done anything to relieve the local rates. The nearly universal abolition of school fees consequent on the introduction of the Fee Grant in 1901 reduced the annual average income of School Boards from sources other than rates and grants from about 9s. 6d. to less than 1s. per scholar, so that the rapid rise in expenditure since that date has had to be defrayed from local sources, and the average contribution for maintenance from the rates, which was 18s. per scholar in 1890 rose to 29s. 5d. in 1902.

The extent to which provision for education was made in the years prior to 1902 from sources other than the public rates is shown in the table below.

The financial control of these voluntary schools has now been handed over to the local authorities by the Education Act of 1902, and it will be seen that the number of scholars for whose education they are responsible has been more than doubled by the transfer.

TABLE V.—*Number of Scholars at Voluntary Schools, Cost per Scholar, Government Grant, and Contribution from other sources.*

Year.	Number of Scholars in Average Attendance.	Average Expenditure per Scholar on Maintenance only.	Average Government Grant per Scholar.	Contributions from other Sources.	Percentage Contributed by the Government.
	Thousands.	£ s. d.	£ s. d.	s. d.	
1874-75.....	1,610,	1 11 10	- 11 6	19 10	36.1
'79-80.....	1,982,	1 14 8	- 14 7	19 10	42.0
'84-85.....	2,184,	1 15 10	- 16 2	19 8	45.1
'89-90.....	2,261,	1 17 -	- 17 6	19 6	47.2
'94-95.....	2,446,	1 18 11	1 8 6	10 4	73.2
'99-1900...	2,489,	2 6 4	1 15 11	9 7	77.5
1900-91.....	2,493,	2 6 8	1 15 5	9 11	78.2
'01-92.....	2,546,	2 6 4	1 15 5	10 -	78.0

The scholars in the voluntary schools received in 1902 a Government Grant of 35s. 5d., whereas in Board Schools it only amounted to 30s. 8d. This is due to the additional Aid Grant of 5s. per scholar, and the Board of Education in their latest report<sup>11</sup> observe that "the large proportion of the Aid Grant which has " during the last five years been devoted to improving the equipment " of voluntary schools will, it is hoped, sensibly alleviate the " burden thrown on the new local education authorities, as the " maintenance of the schools passed into their hands."

The majority of the Reformatories and Industrial Schools are under the control of Voluntary Boards of Managers, who receive contributions from the Treasury according to the number of inmates, while the county and borough councils usually arrange to contribute proportionately to the number of children coming from their districts. Day Industrial Schools are managed by School Boards. Apart from the debt charges, the payments by local authorities towards these schools were about a quarter of a million.

The Technical Instruction Act, 1889, empowered local authorities to supply or aid the supply of technical or manual instruction, and for this purpose they may levy a rate of not more than 1d. in the £. In 1890 the "residue" of the local taxation (customs and excise) duties was given to the county and county borough councils to be applied at their option to technical instruction. In 1890-91 that residue amounted to 740,376l., and in 1901-02 to 967,615l.; the expenditure on technical and intermediate education was in the latter year 1,256,000l.

<sup>11</sup> "Board of Education Report," 1902-03 [Cd-1763], p. 33.

The total outlay by local authorities on education, including technical education and reformatory and industrial schools, has risen from 3,191,000*l.* in 1884-85 to 10,069,000*l.* in 1901-02. (See Table V.)

### (3.) *Police.*

The cost for police and police stations in 1884-85 was 3,488,000*l.*, and in 1901-02 it was 5,530,000*l.*, or an increase of 50 per cent. The number of police employed has increased in the same period from 35,608 to 44,054, and the average cost per head which was about 98*l.* in 1884-85 is now 116*l.* Some part of this increased charge is probably due to the revised arrangements for police pensions provided by the Act of 1890. The outstanding loans for police stations, &c., though not actually very large in amount, have more than doubled since 1884-85, and now amount to 1,606,000.

### (4.) *Highways.*

Under this heading are included the cost of maintenance of roads of all descriptions, scavenging and cleansing, lighting the public streets, and also charges for bridges and ferries. Until the year 1878 the maintenance of the highways within each parish was charged to the parish, but the Highways and Locomotive Act of that year made the rural districts chargeable, and also threw half the cost of main roads on the county at large. The Local Government Act of 1888 required the county councils to bear the whole charge of main roads, except those in county boroughs.

The expenditure, excluding payments for interest and principal (shown in Table V), was in 1884-85 6,500,000*l.*, while in 1901-02 it was 11,854,000*l.*, an increase of 82 per cent. The outstanding loans have not increased so rapidly, but they represented in 1901-02 the substantial total of 44,962,000*l.*, which was about 49 per cent. more than in 1884-85. This outlay has been chiefly incurred in connection with street improvements, a direction in which there has recently been considerable activity. The payments for principal and interest amounted in 1901-02 to at least 1,927,000*l.*, so that the total expenditure in that year was about 13,780,000*l.* Of the debt some 18,695,000*l.* has been incurred on highways, street improvements, and bridges in the metropolis.

### (5.) *Beneficial Works.*

A still greater increase is observable in those descriptions of enterprise which may be described as "beneficial works," under which heading I have included fire brigades, hospitals (not poor-law), land drainage, libraries and museums, parks and open spaces,



sewerage, removal of house refuse, registration, &c., vaccination, and miscellaneous public works. The outlay for these purposes was 4,176,000*l.* in 1884-85, while in 1901-02 it was 8,947,000*l.*, an increase of 114 per cent., and the outstanding debts rose from 22,188,000*l.* to 48,618,000*l.*, or by 119 per cent. This extension has been in part due to extended powers as to libraries, baths, open spaces, &c., granted under the Local Government Act of 1894 and other Acts; but with regard to matters of public health, such as hospitals, sewerage, removal of refuse, &c., "the enormous increase of expenditure has been due more to the growing needs of towns, the advance of science, and the increased administrative activity of local bodies, than to legislative changes."<sup>12</sup>

The charge for sewerage works, naturally an important item, has grown from 917,000*l.* (exclusive of debt charges) in 1884-85 to 1,938,000*l.* in 1901-02, and the outstanding debt from 16,569,000*l.* to 33,200,000*l.* Another item which shows a remarkable development is the outlay on parks and open spaces, which has grown from 145,000*l.* to 631,000*l.*, and the debt on this account from 2,441,000*l.* to 6,885,000*l.* The annual charge for fire stations has risen from 206,000*l.* in 1884-85 to 452,000*l.* in 1901-02, for hospitals<sup>13</sup> from 113,000*l.* to 773,000*l.*, and for libraries from 140,000*l.* to 458,000*l.*

#### (6.) *Reproductive Undertakings.*

The next group to which reference may briefly be made includes with some additions those municipal works which were referred to in Sir H. Fowler's return of 1893 as reproductive undertakings, and covers the provision by local bodies of the supply of water, gas, trams, electric light, markets, baths, cemeteries, dwellings for the working classes, allotments, harbours, piers, &c. In 1884-85 the total outlay under these heads was 5,130,000*l.*, while in 1901-02 it was 13,332,000*l.*, while the debt incurred (shown in Table IX) has risen from 85,269,000*l.* to 166,500,000*l.*, or by 95 per cent. The interest and repayment of principal on this huge sum must of course be very large, and it appears from the Local Taxation Returns of 1901-02 that it was not less than 6,726,000*l.*, so that the total outlay amounted to at least 20,056,000*l.*

The particulars relating to the year 1901-02 for the items which I have included under the head of reproductive works are given in the following table, together with the revenue so far as it is separately distinguished.

<sup>12</sup> "Royal Commission on Local Taxation," Appendix to Final Report, p. 25.

<sup>13</sup> Excluding workhouse infirmaries and hospitals belonging to the Metropolitan Asylums Board.

TABLE VI.—*Reproductive Works. Expenditure and Revenue, 1901-02.*

[In thousands.]

	Expenditure not out of Loans, and excluding Payments for Principal and Interest.	Repayment of Loans.*	Amount of Interest Paid in respect of Loans.*	Total.	Revenue so far as it is Separately Distinguished.	Out-standing Loans.
	£	£	£	£	£	£
Waterworks .....	1,657,	563,	1,790,	4,013,	4,018,	58,960,
Gasworks .....	5,723,	349,	646,	6,718,	6,966,	22,298,
Tramways .....	1,817,	275,	307,	2,399,	2,703,	12,740,
Electric lighting (other than public lighting) .....	973,	304,	388,	1,665,	1,671,	14,832,
Markets .....	451,	139,	217,	807,	872,	7,206,
Baths .....	379,	95,	69,	543,	251,	2,514,
Cemeteries .....	408,	122,	78,	608,	388,	3,000,
Housing of the working classes .....	87,	71,	121,	279,	†	6,927,
Allotments .....	50,	1,	1,	52,	†	109,
Harbours, Piers, &c. ...	1,787,	93,	1,290,	3,170,	3,063,	38,023,
Total .....	13,332,	2,015,	4,907,	20,254,	—	166,609,

\* The figures given in these columns are not complete, as certain payments were made which could not properly be apportioned.

† Not distinguished.

One noticeable feature in this table is that although the revenue is on the whole rather in excess of the expenditure, the sum applied to the repayment of loans is but small. It is of course frequently asserted that these municipal undertakings are not charged with all the costs of administration, &c., and in this connection it is to be remembered that the accounts of boroughs in which a large portion of these amounts are spent, are only examined by three local auditors, two of whom are elected by the burgesses and one by the mayor. The accounts of parish councils, of district councils except in boroughs, of county councils, of boards of guardians and of school boards, on the other hand, are all audited by the Government auditor, and that it may be open to consideration whether there would not be some advantages in extending this practice to boroughs. Moreover, in view of the uncertainty which exists in regard to the financial position of some of these municipal enterprises, it might tend to place them on a sounder basis if they were put in the same position as a limited company. They are at present treated as public companies for income-tax purposes

(Schedule D), and they might not unreasonably be required to append the certificate of a chartered accountant to their accounts, which should show their profit and loss, their assets at a reasonable valuation, and their liabilities in respect of debts incurred on behalf of these undertakings. This latter suggestion, I may say, is practically the basis of the recommendations of the Select Committee on Municipal Trading, but the opinion of the Committee was decidedly against extending the present system of local government auditors to municipal corporations.

(7.) *Miscellaneous Charges.*

The sums shown under this head in Table VII cover private street works, public buildings and offices, establishment charges, legal and parliamentary proceedings, salaries and superannuation allowances, and miscellaneous charges. The total has grown from 3,219,000*l.* in 1884-85 to 6,760,000*l.* in 1901-02; only a portion, however, of the salaries, charges, legal expenses, &c., is included, as in most cases the salaries paid in connection with any particular undertaking are included with other expenditure thereon.

(8.) *Loans Repaid and Interest.*

Principal of loans repaid and interest are shown in Table VII in one sum, as for the years prior to 1899-1900 the amounts cannot be separately apportioned, while even for subsequent years only a very rough approximation can be arrived at. The total has increased from 9,879,000*l.* to 18,337,000*l.*, or by 83 per cent., the loans themselves having increased in the same period by 92 per cent.

The items of local expenditure which have now been enumerated are summarised in the following table, which shows the total outlay, excluding capital expenditure, at five-year intervals from 1884-85 to 1899-1900, with the two subsequent years:—

TABLE VII.—*Total Expenditure (not out of Loans) by Local Authorities in England and Wales.*

[In thousands.]

	1884-85.	1889-90.	1891-95.	1899-1900	1900-01.	1901-02.
	£	£	£	£	£	£
Poor relief and lunatic asylums .....	8,272,	8,113,	9,503,	11,071,	11,747,	12,365,
Education, including technical education, reformatory and industrial schools .....	3,191,	4,057,	6,438,	8,828,	9,468,	10,069,
Police and conveyance of prisoners.....	3,683,	4,109,	4,836,	5,314,	5,403,	5,713,
Highways, bridges, and public lighting .....	6,499,	7,233,	8,563,	10,568,	11,396,	11,854,
Beneficial works .....	4,176,	4,550,	6,255,	8,164,	8,622,	8,947,
Reproductive undertakings .....	5,130,	5,685,	7,246,	19,668,	12,732,	13,332,
Miscellaneous, including legal and establishment charges .....	3,219,	3,339,	4,148,	5,678,	6,196,	6,700,
Principal of loans repaid and interest on loans....	9,879,	11,035,	12,721,	15,699,	16,873,	18,337,
Total .....	44,054,	48,180,	59,715,	75,990,	82,437,	87,377,

Although these years have been selected because 1884-85 is in most instances the earliest year for which all the details necessary for this classification are available, incidentally the comparison has the advantage of showing roughly the increase in the quinquennium preceding the Local Government Act of 1888 and in the two succeeding periods of five years.

The augmentation in the outlay is no doubt partly to be attributed to the increased powers and duties of local authorities consequent on the passing of the Local Government Acts of 1888 and 1894, and to some other extensions of local powers such as those contained in the Public Health Act, 1890; the Housing of the Working Classes Act, 1890; and the Public Libraries Act, 1892. Under the head of education also the introduction of the "technical" "education" grant in 1890, and of what is practically free education by the Act of 1891, largely account for the increase of 59 per cent. in the expenditure of 1894-95 as against 1889-90.

Some portion, moreover, of the augmentation must be attributed to the increased interest in local affairs consequent on the transfer of a large measure of control in 1888 and again in 1894 to popularly elected bodies. As Messrs. Wright and Hobhouse observe in their well-known book on Local Government, "the creation of popular bodies directly responsive to the demands for sanitary and other improvements, and controlled in many cases

"by the vote of the compound householder, will undoubtedly tend to increase the burden of local rates and debts."<sup>14</sup> The greater vigour displayed in the local administration, and the increased interest in local government on the part of the elected representatives, however praiseworthy, has obviously a considerable tendency to encourage expenditure, while it must be remembered that the guardians, the county councils, the district councils and numerous other bodies (including in the past the school boards), have been able to pursue their individual aims without any reference to the expenses incurred by the remainder in the same area. In fact, some portion, even if only a small portion, of the rapidly growing expenditure may probably be attributed to the absence of any financial control. The ratepayers' control usually only operates at elections, and must naturally be after, and perhaps long after, the expenditure has been incurred. In most cases it is of a very vague and indefinite character, because the body to be elected is frequently only partly responsible for the outlay.

The percentage of growth in each quinquennium, and in the whole period of seventeen years from 1884-85 to 1901-02 is shown in the following table:—

TABLE VIII.—*Percentage Increase in the Expenditure of Local Authorities in England and Wales.*

	Percentage of Increase			
	In Five Years 1884-85 to 1889-90.	In Five Years 1899-90 to 1894-95.	In Five Years 1894-95 to 1899-1900.	In Seventeen Years 1884-85 to 1901-02.
Poor relief and lunatic asylums ...	— 2	+ 17	+ 16	+ 50
Education, including technical education and reformatory and industrial schools .....	+ 27	+ 59	+ 37	+ 215
Police and conveyance of prisoners	+ 11	+ 18	+ 10	+ 55
Highways, bridges and public lighting .....	+ 11	+ 18	+ 23	+ 82
Beneficial works .....	+ 9	+ 36	+ 30	+ 114
Reproductive undertakings .....	+ 11	+ 28	+ 47	+ 160
Miscellaneous, including estab- lishment and legal charges .....	+ 4	+ 24	+ 37	+ 110
Principal of loans repaid and interest on loans .....	+ 12	+ 15	+ 23	+ 86
Total .....	+ 9	+ 24	+ 27	+ 98

<sup>14</sup> Wright and Hobhouse, "Local Government and Local Taxation," 1894, p. 19.

During the past seventeen years the total expenditure of the local authorities in England and Wales has risen by 98 per cent., and the increase, it will be seen, has been very much larger in the later periods. At the close of the first five years the amount was only 9 per cent. greater, whereas in 1899-1900 it was 27 per cent. in excess of the amount in 1894-95. In the case of poor relief there was a decrease in 1889-90 compared with 1884-85, which was followed by a growth of 17 and 16 per cent. The cost of highways and bridges has increased, but not to the same extent as other beneficial works, which include drainage, libraries, parks, &c. In the case of reproductive works the extension in recent years has been very rapid. The repayment of loans and the payment of interest has increased, but not at a rate equal to the growth of the unpaid balance.

The growing total of outstanding loans is similarly classified in the following table:—

TABLE IX.—*Outstanding Loans of Local Authorities in England and Wales.*

[In thousands.]

	1884-85.	1889-90.	1894-95.	1899-1900.	1900-01.	1901-02.
	£	£	£	£	£	£
Poor law and lunatic asylums.....	9,687,	10,594,	12,037,	17,113,	18,860,	21,419,
Education, including technical education, reformatory and industrial schools	14,877,	18,240,	22,971,	30,269,	31,821,	33,482,
Police .....	721,	1,019,	1,254,	1,495,	1,566,	1,606,
Highways and bridges	30,059,	32,913,	34,495,	40,384,	43,607,	44,962,
Beneficial works .....	22,158,	27,805,	34,407,	42,334,	45,842,	48,618,
Reproductive undertakings .....	85,269,	97,550,	110,837,	140,970,	152,076,	166,609,
Other purposes .....	10,407,	10,550,	19,334,	21,299,	22,932,	26,721,
Total .....	173,208,	198,671,	235,335,	293,864,	316,704,	343,417,

The aggregate amount has risen in the past seventeen years by 92 per cent., and reached a total of 343,000,000*l.* in 1901-02. This includes, however, 166,000,000*l.* borrowed for reproductive undertakings, which is probably represented by property in municipal ownership to at least that sum. Apart, however, from these trading loans, the amount has been very rapidly rising, particularly in the later years. The percentage of growth is shown in the following table:—

TABLE X.—*Percentage Increase in the Outstanding Loans of Local Authorities in England and Wales.*

	Increase per Cent.			
	In Five Years 1881-85 to 1889-90.	In Five Years 1899-90 to 1894-95.	In Five Years 1894-95 to 1899-1900.	In Seventeen Years 1881-85 to 1901-02.
Poor law and lunatic asylums .....	+ 9	+ 14	+ 42	+ 121
Education, including technical education, reformatory, and industrial schools .....	+ 23	+ 26	+ 32	+ 125
Police .....	+ 41	+ 23	+ 20	+ 123
Highways, bridges, and public lighting .....	+ 9	+ 5	+ 17	+ 49
Beneficial works .....	+ 25	+ 24	+ 23	+ 119
Reproductive undertakings .....	+ 14	+ 14	+ 27	+ 95
Other purposes .....	+ 1	+ 83	+ 10	+ 158
Total .....	+ 15	+ 18	+ 25	+ 92

The loans on workhouses and lunatic asylums went up 42 per cent. between 1894-95 and 1899-1900, and the increase over the whole period was 121 per cent. The educational debt rose by 125 per cent., the expenditure on street improvements raised the debt for highway purposes by 49 per cent. The various items under the heading of beneficial works have more than doubled their debt charge, while the liabilities for reproductive undertakings have increased by 95 per cent. Apart, however, from these latter loans, the local burden has increased from 88,000,000*l.* to 177,000,000*l.* or by 92 per cent. in seventeen years. The fact that each separate local authority may borrow money for its own purposes generally on the security of the rates, without any reference to the loans which others may be obtaining on the same security, is a somewhat unsatisfactory circumstance in connection with this continual increase, especially taken in connection with the other fact that it is difficult for any ratepayer to know exactly what may be the amount which the various authorities are accumulating within the same district, for up to the present no attempt has been made to restrict the aggregate debt of any locality, and "an inhabitant of a rural parish may be subject to a number of separate debts charged on the different areas which happen to include his property, the aggregate amount of such debts being unlimited."<sup>15</sup> The control exercised by the Local Government Board is directed mainly to

<sup>15</sup> Wright and Hobhouse, "Local Government and Local Taxation," 1894, p. 20.

fixing the length of time over which the loan may be spread, a matter dependent on the character of the work; while the control of Parliament is only directed to a consideration of the special objects which may be provided for in any Bill containing authority to raise loans.

The amount of these loans represents at the present time in England and Wales as a whole approximately 10*l.* 10*s.* per head of the population, and 1*l.* 18*s.* for every £ of rateable value. The distribution, however, is not at all uniform, the great bulk of the amount falling naturally on urban districts. The figures for 1884-85 and for 1900-01, so far as they can be divided, are as follows:—

TABLE XI.—*Outstanding Loans and Amount per £ of Rateable Value in Urban and Rural Areas.*

Areas.	1884-85.		1901-02.	
	Outstanding Loans.	Per £ of Rateable Value.	Outstanding Loans.	Per £ of Rateable Value.
		£ s. d.		£ s. d.
County of London .....	35,857,000	1 4 9	62,962,000	1 11 8
Extra Metropolitan areas—				
Wholly urban .....	119,430,000	1 18 11	250,412,000	2 12 9
Partly urban and partly rural .....	16,393,000	—	26,102,000	—
Wholly rural .....	1,528,000	— 6	3,941,000	— 1 6
Total .....	137,351,000	1 3 7	280,455,000	1 18 3
Total England and Wales	173,208,000	1 3 9	343,417,000	1 17 11

The unpaid debt of the metropolis grew, it will be seen, from 1*l.* 4*s.* 9*d.* per £ of rateable value to 1*l.* 11*s.* 8*d.*, while in other urban areas the growth has been from 1*l.* 18*s.* 11*d.* to 2*l.* 12*s.* 9*d.*

The preceding summary of the annual payments and the debts of our local bodies would be incomplete without some reference to the sources from which the necessary money is obtained. They may be divided into three heads: (1) grants and subventions from the imperial exchequer; (2) public rates; and (3) revenue from tolls, rents, reproductive undertakings, &c., the amounts of which are given below:—



TABLE XII.- *Revenue of Local Authorities in England and Wales.*

[In thousands.]

1	2	3	4	5	6	7
Year.	Grants from Imperial Exchequer.	Public Rates.	Total of columns 2 and 3.	Revenue from Water and Gas Works, Electric Light, and Tramways.	Revenue from other Sources.	Total Receipts, excluding Loans (columns 4, 5, and 6).
	£	£	£	£	£	£
1884-85 ....	3,622,	25,667,	29,289,	5,496,	9,065,	43,849,
'89-90 ....	6,522,	27,713,	34,235,	6,512,	9,490,	50,238,
'94-95 ....	8,994,	38,855,	42,849,	7,976,	9,631,	60,456,
'99-1900 ....	12,249,	40,734,	52,983,	12,252,	11,967,	77,202,
1900-01 ....	12,656,	42,994,	55,650,	13,962,	12,373,	81,986,
'01-02 ....	12,531,	46,439,	58,970,	15,358,	12,851,	87,179,

The total receipts from the imperial exchequer and the public rates together may be taken to represent the net cost to the public of our local government, and these have risen from 29,289,000*l.* in 1884-85 to 59,000,000*l.* in 1901-02, that is, the average contribution per head of the population which was in the earlier year something less than 22*s.* is now about 36*s.* The taxpayer as distinct from the ratepayer now contributes about 21½ per cent. to the net cost, as compared with about 12½ per cent. in 1884-85, but as this contribution is allotted by Parliament on a fixed system which is broadly speaking beyond the control of our local representatives, the extent to which the greater expenditure has added to the burden imposed on the community must be measured by the growth in the public rates, and although these have grown from 25,667,000*l.* to 46,500,000*l.*, the increase has been to some extent discounted by a growth in the valuation from 145,500,000*l.* to 186,500,000*l.*<sup>16</sup>

Although it is not possible to find out precisely in all cases how far the additional expenditure which has been dealt with in the earlier part of this paper has fallen on the rates, it is possible to trace the growth of the rates raised by poor law authorities, by school boards, and by county, town and rural councils, which indicates broadly how far the burden has been felt by the ratepayer.

#### *Rates raised by Poor Law Authorities.*

The expenses of poor law authorities include some expenditure unconnected with poor relief amounting to about 5 per cent. of the total, but owing to the contributions from the imperial exchequer

<sup>16</sup> Rateable value. The assessable value was 174,500,000*l.*

the amount of rates raised is now about 1,500,000*l.* less than the gross expenditure on the relief of the poor. In consequence of these increased grants the average rate in the pound has not increased except in the metropolitan district, where it was 18*8d.* in 1884-85, and 22*4d.* in 1901-02, while the average rate levied by other poor law authorities stood at about the same figure, viz., 1*s.* 1*d.* in both years. In the intervening years there were of course fluctuations, the immediate effect of the grants being to reduce the rate, while the continual growth of expenditure has brought it up to its former level. Although these represent the average rates for the country as a whole, they cover some very striking divergencies even within the boundaries of the same county. In London, for instance, in the four unions of Bethnal Green, Stepney, Poplar, and St. Olave's, the rate was over 3*s.*, while in six other metropolitan unions it was under 1*s.* 6*d.* in the pound. In Berks, Bradfield had a rate of 4*¾d.*, and Easthampstead, in the same county, a rate of 1*s.* 7*d.*, and similar differences may be found in nearly every county in the country.

#### *School Boards.*

Although the increased contributions from the exchequer have been much greater here than in the case of poor relief, they have not prevented the growth of rates under this head to something approaching double the amount at which they stood in 1884-85. The average School Board rate in London in that year was 7*4d.*, and in 1901-02 it was 14*4d.*; in English boroughs the rate (where levied) rose from 5*2d.* to 11*4d.*, and in other districts from 6*1d.* to 10*7d.*

#### *Town and County Councils.*

In London the aggregate rates have risen from 4*s.* 6*½d.* in 1884-85 to 6*s.* 4*½d.* in 1901-02, so that, deducting the poor law and school board charges, there has been a change from 2*s.* 4*½d.* to nearly 3*s.* 3*¾d.* Excluding these expenses, the charges appear to be rather less than the average of town councils, which from 2*s.* 11*d.* have reached about 4*s.* 1*d.* in county boroughs and 3*s.* 8*d.* in other boroughs. Urban sanitary authorities' expenses have grown from 2*s.* 2*d.* to nearly 3*s.* 2*¾d.* in the £.

In bringing to a close this brief review of the local expenditure in England and Wales, we may summarise the position in 1901-02 compared with 1884-85 by saying that for every 100*l.* spent in the earlier year we are now spending 198*l.*, for every 100*l.* of debt we now owe 192*l.*, for every 100*l.* of rates formerly raised we now have to collect 180*l.*, apart from the additional help contributed by the

taxpayer from the imperial exchequer. Taking the population as a standard, the rates now raised represent in London 55s. 9d. per head compared with 33s. 5d. in 1884-85, and in the whole of England and Wales the rate now averages 28s. 6d. per head against the 19s. 1d. paid in the earlier year. The debt in London now amounts to 13l. 17s. 1d. instead of 9l. 2s., which was the figure in 1884-85, and in the country as a whole to 10l. 10s. 7d. in lieu of 6l. 8s. 8d. In relation to the valuation, the rates in England and Wales have increased from 3s. 6d. to nearly 5s. 4d. in the £, or by rather more than one-half; that is to say, the occupier of a property assessed at 100l. per annum in 1901-02 had on the average to contribute 26l. 13s. to the public rates, whereas the burden on property rated at the same amount in 1884-85 was only 17l. 10s.

Suggestions as to the means to be adopted to meet the enormously increased outlay and at the same time to relieve the burden on the ratepayer lie outside the scope of this paper, but apart from affording additional assistance from the exchequer, which was the means favoured by the Royal Commission on Local Taxation, and apart from a widening of the basis of local taxation, it may perhaps be open to consideration whether there is not some need in the first instance for a Central Authority who should have power to examine, and possibly to limit or otherwise control the local debt incurred and the aggregate amount of rates levied within each area.

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#### DISCUSSION *on* MR. R. J. THOMPSON'S PAPER.

THE PRESIDENT, in inviting discussion, said they were much indebted to Mr. Thompson for so succinct and interesting a series of notes on the growth of local expenditure and taxation—a subject with which many present were familiar. A practical examination of the growing importance and pressure of these burdens would not be without considerable benefit.

Mr. RICHARD B. MARTIN (Treasurer) said there could be no doubt that the subject of the paper was a matter of vital importance to the country. In the House of Commons attention had recently been called, in the most serious manner from both sides of the House, to the enormous increase in imperial expenditure, and when in addition they had such large local expenditure and local indebtedness it raised the very serious question as to what limit

could be placed on the expenditure so as to leave some reasonable resource to fall back upon in case of national emergency. In municipal affairs everybody wanted a great deal more than they used to. Take the workhouses for example; they were very much up-to-date, and had requirements that would never have been thought necessary, advisable, or even possible, a few years ago. He need not go into the question of education, which was almost a thing by itself. They had been very much behind-hand with education, but a great deal of attention had been given to the matter, though there was considerable doubt whether the effort last made to secure co-ordination of education would be crowned with success. He hoped it would add considerably to the wealth and prosperity of the country, but it would inevitably not tend to reduce the rates. In all these things one point which had been very well shown was that so much of the expenditure was sanctioned by councils elected by persons who did not themselves feel the burden of those rates. Of course, theoretically, it was the same thing whether you paid the rates out of your pocket, so much a week or a month, or had it added to your rent and collected by the proprietor, but it made a great difference to a man who had to put his hand in his pocket at an inconvenient time and produce the necessary monthly or weekly payment. The latter would be more inclined to keep the rate down. This was a very large subject. No doubt there was a tendency to have everything of the best, especially when you were doing it with other people's money. There was a great deal of money spent on tramps and poor law administration, but no serious effort had ever been made to put down tramps and pauperism by insisting that a man should not live on the rates and on his fellow citizens while adding nothing himself to the national wealth. Nobody had more sympathy than he had for a man who had lived honestly all his life, and really had not had money to save up for his old age; he was justified in looking, under present circumstances, to being somehow cared for in his old age; but that a man who had done nothing all his life—not only in his active years but in his old age also—should be kept at the expense of others seemed to him rather too bad. He would only say one thing with regard to reproductive works. There was always a danger that they might be superseded. When gas was introduced, everybody cried out for gas; gas companies came in, and the money of the town was invested in gas with a view to making it an attractive place. Then, a few years after, came electricity, and for all they knew, gasworks might be superseded. There were many other interesting points in this paper which he hoped would elicit further discussion.

Mr. C. S. LOCH said there were many points in this paper which naturally attracted any one who was interested in public administration; and what had been said by the last speaker was in many ways not at all too strong. He proposed to touch on one or two points only, more particularly those bearing on poor relief. There was no doubt as to the enormous increase of expenditure

under this head. But in 1869-70 the workhouses were in a very poor condition indeed, and the infirmaries were very bad; so that about that time a great outlay was necessary. Later the method of relief in the "House" was immensely improved, and a great deal was done that went far beyond the reforms proposed in the earlier stages. The figures in the first table in the paper showed what the result had been. The expenditure on out-door relief went down, then it rose again, until latterly it almost reached the first figure in the table. The in-door relief figure had gone steadily up, and the consequence was that, if this process was to continue, they would find that both out-door relief and in-door relief would greatly exceed their former limits; both would become attractive. Again, with regard to those in receipt of relief, it was to be noted that in the comparatively prosperous years of the last decade there had been little or no reduction of pauperism to population. From an examination of the figures, it appeared that the number of children since 1887—speaking generally—had gone down very much, and the number of the able-bodied had been reduced; the increase had been, roughly, in the infirm and the aged. The consequence was that all the good that they might have gained on the one count they had lost on the other; so that progress made had been neutralised. The justification of a large expenditure in poor relief might be a reduction in pauperism; but in this case they could not point to a reduction. But now it seemed that the large expenditure was not providing the necessities of administration, but making pauperism attractive. There was another question. Was the local control sufficient? In Germany, no doubt, the whole system of poor relief was different; but the method of controlling poor expenditure there was worthy of note. In any given town, the poor law administration were required by the Town Council to make an estimate of what it would spend in the year, and it would have to keep to that estimate. The Town Council, elected on a high franchise quite unlike our own, the one chief authority, would control the whole expenditure, the collection of rates, the raising of loans, and so on. Thus the poor administration, the authority that spent the money of the community on relief—a form of expenditure which many persons most naturally desired to increase—reported directly to another authority, and was, in a manner, its servant. In England there was no such local control, nor any substitute for it. There was, of course, the Local Government Board at the centre, but it was generally admitted that the supervision over loans was not close enough. Nor were questions of rating controlled on any general principle by which, for instance, the rate should not exceed a certain standard proportional to the rateable value, or some rule of that kind; or could any proposal be brought forward by which the occupier should always pay his share of the rates? There might be difficulties in such a scheme, but experiments showed that it was practicable. If it were adopted, the rate might so be levied that everybody bore his share of it directly, and knew how much it was and for what purpose it was levied. Again, some adjustment might be wanted under other

circumstances. Take a district in which the railway company was the largest ratepayer; the railway might practically become the payer of the rate, and the real educative financial responsibility of the ratepayer generally minimised and neutralised. Was not some reconsideration of the question possible on the grounds of purpose and economy in expenditure more consonant with the older policy of administration in this country? There were two other points. Rates and taxes misapplied tended to kill the natural instincts in accordance with which people contributed to the relief of the poor and distressed, or supported themselves in sickness and old age. Such a misapplication affected much larger groups of persons than people generally imagined. Further, a large demand for rates really meant a very large demand on the means which the people had in their hands for providing for themselves. In a rising demand for house accommodation, as there was generally in the metropolis, if rates rose rents rose, and if rents rose, and the weekly income of a man was thus made less available for other purposes, it was argued that he had to that extent a claim for State support in old age and in other ways. The policy of large rating thus reacted unfavourably on the individual just at the point where, in the interests of the community, it was most important that he should be staunch and independent.

Dr. BENEDICT W. GINSBURG said he only wanted to make one or two obvious remarks which ought to be brought out in reference to this paper. They must all agree with what had been already said, but he thought the very alarming increase in rates had something to do with the question which was very much before them just now—the railway question. The railways, as Mr. Loch had said, were paying a very large amount of rates, but they were brought into competition with locally-aided trams, and their suburban traffic was being cut into. They were paying money, in the case of the trams, and in the case of the Manchester Ship Canal, in order to bring a competitor into opposition with themselves. That not only was very unfair, but it also obliged them to keep their charges up and was to a certain extent a detriment to our agricultural interest, because the railways, who were paying such enormous contributions—both in money and in loss of earning power—towards local taxation, were not in a condition to meet the agriculturists, as they ought to be. He also ventured to think that the same observation might be applied to the tariff question. When Mr. Cobden was agitating half-a-century ago, local taxation was practically a negligible quantity, but now it had become so heavy that in certain cases it amounted to some extent to a bounty in aid of the foreigner.

Mr. E. W. BRABROOK, C.B., thought that the moral of the paper was that local taxation and local indebtedness had increased, were increasing, and ought to be diminished; but whether it ever would be diminished was far beyond the possibility of predicting. He confessed that when he saw not merely the vote to which

Mr. Loch had referred, but the probability that Parliament would pass in the present session an Act which would substitute for the doctrine so soundly laid down in the Poor Law—a doctrine that relief was to be the reward of merit—he feared very much that there were no indications whatever of any diminution in the rates. The author suggested a little more centralization as one remedy, but he could hardly agree with him there. He thought experience showed that centralization did not tend to economy, and that the remedy should rather be sought in some other direction, as in the strengthening of local interest and local control. In the long run, if the local authorities put on the market applications for loans far in excess of the real value of the security, the public would not subscribe, and so there was an ultimate appeal to the common sense of the investing public; but that appeal was a long way off. They wanted some method of enforcing on local authorities the dictates of common prudence, and he should be disposed to look to some measure which would greatly strengthen local interest and local control for a possible remedy for these evils.

Mr. L. G. CHIOZZA-MONEY, after complimenting the author of the paper upon the valuable collection of facts and figures he had placed before the Society, said that it had been too broadly assumed by previous speakers that local expenditure necessarily bred local expenditure. It seemed to him that a very large number of the reproductive undertakings referred to might afford considerable relief to local expenditure in time to come. So far as poor relief was concerned, it must be remembered that the way to deal with that subject was not to take the pauper and do anything with him whatever, either by way of extinction or otherwise, but to prevent the creation of the pauper. It also appeared to him that that was best done when the subject was very young. When, therefore, they saw the local authorities—who represented that portion of the government of the people which came most closely in contact with their lives and their necessities—clearing out slums, widening roads, making the conditions of life better, spending more money on education under the direction and control of a central authority, &c., they were on the way to prevent the breeding of paupers. As those present would know, it was not difficult to find places not very far from that room where there were factories in which paupers were at that moment being manufactured; where people were being bred under conditions which generated pauperism, ignorance and crime—plague spots which ought to be blotted out of our civilization. The bearing of local expenditure on that was this. He believed that much of the increased expenditure was being directed to the sweeping out of such places, and to the closing of pauper factories. If that was successfully done they would have gone far towards relieving the local expenditure of the future.

Mr. N. L. COHEN thought that the tendency to increased expenditure was not merely due, as was sometimes suggested, to electoral affinities of the members of local authorities. A wider diffusion and greater intensity of altruism was, he thought, very marked during the last half of the reign of Queen Victoria. Also

the general advance in the standard of comfort, and even of luxury, was reflected in a desire for greater liberality in the scale, and consequently in the expense, of relief and accessories of relief. He desired to support the plea of Mr. Loch, which he interpreted as urging greater attention to and more consideration for the *relative* merits of different projects coming before the local authorities. In that way proposals, which were in themselves perhaps more or less desirable, could be considered with reference to other commitments and aspirations, and thus kept more proportionate to the normal variation, mostly accretion, in the incomes of the respective local authorities. The defect often was that a proposal, which was beneficial and not economically hurtful, when worked on a small scale, became directly or indirectly mischievous when the same principle was applied with less discrimination. In fact sometimes that defect seemed to correspond to the old illustration in the picture in *Punch* of a farmer who, when offered a small glass of liqueur, asked for "Zum o' that in a mug."

Mr. J. A. BAINES, C.S.I., said that it was, perhaps, only natural that the discussion should run upon the policy of local expenditure, rather than confine itself to the illustrations of the growth of that expenditure which Mr. Thompson's paper had so comprehensively laid before them. It had been suggested that more de-centralisation and increased popular control of local finance would result in economy, by which was meant the reduction of expenditure. He ventured respectfully to differ from that conclusion. In the first place, it would be seen that the adoption of measures increasing the popular, or local, control, had been followed by a rapid rise in the expenditure, and, again, from his own not inconsiderable experience of municipal work and electioneering, he could confidently assert that the influence paramount in such contests was always, except in such extraordinary cases as those of Marylebone and Warrington, thrown in favour of any expenditure from which class or personal benefit was expected to be derivable. The altruism mentioned by Mr. Cohen was a modern factor in municipal finance of great importance, and which required careful and cold-blooded watching, owing to its connection with the capital expenditure of local bodies, the increase in which was one of the features most prominent in the figures now under discussion. In the municipal life of the day, too much consideration seemed to be paid to existing conditions, to the exclusion of the lessons of the past and the probabilities of the time to come, and every effort is concentrated upon the improvement of the present at the cost of posterity. Large loans for undertakings of by no means a permanent character or use are spread over periods far exceeding that for which a local body is entitled to burden its successors merely in order to diminish the proportion of the loan repayable by the generation in immediate enjoyment of the initial expenditure. Local authorities of 1904 should consider that they are just as likely to be ignorant of the needs and burdens of eighty or hundred years hence as their predecessors of 1804 were of those of the end of the century just closed, and they should be chary, accordingly, of hampering the



finances of the future by imposing upon them a heavy proportion of the cost of undertakings which by that time may be worn out or obsolete. For example, take electric generating stations, of which many erected eight or ten years ago are now superseded—such has been the progress in discovery—by more efficient, and therefore cheaper, systems, and are “scrapped” by private companies accordingly, but in the case of a municipality they have been built out of a loan spread over a term of about forty-two years. The efficient control, therefore, over municipal borrowing was essential to sound finance, and in London, so far as the county and borough councils were concerned, such control was exercised, and before fresh obligations are incurred, the total indebtedness of the local rates to all bodies is taken into consideration. He would add, in conclusion, that the growth of the incidence of local expenditure, as distinguished from its absolute amount, was obscured from the view of the ordinary ratepayer by periodically increased assessments of the rated property. Even in London, where the system was better and more uniform than elsewhere, there is room for much improvement, and injustice, whether by over or under-assessment, may be avoided by improvements such as he was glad to note were now under the consideration of Parliament.

The PRESIDENT, in moving a vote of thanks to Mr. Thompson, wished to add one or two words of appreciation, both of the paper itself and of the magnitude of the subject with which it dealt. He had been personally identified in his earlier years very closely with the question of the growth of local taxation and the incidence of rating. The figures before them made it plain that the growth of local expenditure continued in an acceleratory ratio. He had not been able to follow it of recent years with the same closeness that he did some thirty years ago, and had been amazed, in looking at the matter when reduced to the form in which Mr. Thompson had put it, at the actual percentage of growth in several items. He was not prepared to learn, for example, that there was a growth in seventeen years of 217 per cent. in the local cost of Education alone, while a growth of 50 per cent. in the cost of Poor Relief and Lunacy gives cause for serious reflection. As Mr. Baines had pointed out, the discussion had rather deviated from the actual figures to the question of what was the underlying cause or impulse compelling all this additional expenditure of public money. Perhaps it might be said there were about three different forces which had been operating in that direction. First they had a factor, present alike in Imperial as well as Local Government, in the increase of cost in the machinery required for the performance of public duties. There was no use in concealing the fact that, for good or ill, in our more complex conditions of life, that machinery became more costly. Probably it was at the same time more perfect, and they preferred to be governed by a very much more costly machine than sufficed for their predecessors. The second, and perhaps the greatest of all factors, which influenced the increase of local expenditure simply took him back to that movement of population which he made the subject of his first address from that chair—the great feature of urban agglomeration.

The more people are massed together in towns the more enormously will you increase the local expenditure necessary for the convenience of those people. While they lived in the country, apart from each other, each man provided for many immediate wants for which the townsman had recourse to rates. In the country the outlay was made, but not usually under the name of "rates." They had to provide for water supply, lighting, sewerage—or whatever answered for that—and for many other advantages, out of their own pockets, not by way of taxation. If people must continue to be packed closely, for purposes of gain or purposes of pleasure, in unnecessarily overgrown agglomeration, it would soon tax the ingenuity even of the ablest administrators of municipalities to provide money enough for the new wants which were necessitated by the daily wants of these congested masses of humanity. But there was a third factor at work, and that was the one to which Mr. Loch and Mr. Martin had both called attention—a lack of determination to look at the proposals for public outlay from their true and ultimate economic standpoint. There was a greater laxity, he feared, in giving poor law relief compared to what had formerly been the rule. He did not think that Mr. Cohen's answer, that a greater desire to benefit our poorer neighbours entirely accounted for it. He thought a great deal was due to the neglect of many who were or might be concerned in local administration to give themselves the trouble of facing courageously the problems which arose, and resisting the tendency to promote expenditure simply as being for the moment popular. But, after all, the main lesson given them in this paper was that they had to remember that whether these new outlays were right or wrong, they were more and more burdening posterity, and more and more refusing to take their own immediate part in discharging the burdens they had nominally accepted. Attention had lately been called to this question in Parliament in connection with the Imperial Budget, and he could not help remembering that more than twenty years ago he and others very strongly supported a little measure which, if it had had the consequence he presumed it was meant to have had, would have been successful in bringing annually before Parliament a local budget in which, every year at all events, through a Parliamentary discussion—and there was no such forum left us for discussion in this country—the stealthy growth of local expenditure, and particularly local debt. It might be said that such a review by the House of Commons on a solemn motion of the rate-burdening actions of local corporations would be less practical than municipal debates, because it could not actually alter the local policy, and might pass into a mere form of the nature of the annual review of the Indian Budget. It would nevertheless have secured one thing at all events, and had the effect of bringing before the most acute court of criticism in the world the startling growth of the local figures—the result as much perhaps of Parliamentary recklessness as of local extravagance—which Mr. Thompson had usefully now put. The opportunity would have enabled those who defended the expediency of that expenditure to justify in Parliament the generous

outlay, and the justice of the taxes imposed to meet it as a matter of pure finance. The incidence of local rates was not the immediate question brought before them on the present occasion. Despite all the relief and concessions effected by local taxation reformers, there was much room for improvement in that matter. But the three main points which struck him in analysing the paper were those to which he had alluded, and he was sure they would all join in thanking Mr. Thompson, who was a very young Fellow of the Society, for the courage of his first effort in bringing before them an eminently statistical question, but one fraught with enormous difficulty. The scattered statistics of our local finance could only be dealt with on broad lines when the totals were put together in some such manner as it was here presented. He knew the author himself would say the work was far from perfect. He never saw a paper on local taxation—and he had seen many and tried to manufacture some—that had at all approached perfection, but he was sure they all acknowledged that this outline of the main features of the growth of local outlay and local debt left them something to reflect upon, and such figures as these warned them, whether as local administrators themselves or as the electors of local authorities, that the time had come when they ought to look very much more carefully into the way they were going in lightheartedly piling up the local burdens of the future.

Mr. R. J. THOMPSON, in thanking the meeting for the kind way in which they had received his paper, said, with regard to the suggestion made in the last paragraph as to the possibility of establishing some kind of central authority, who should review the local debt incurred and the aggregate amount of rates within each area, that it seemed possible that such a central committee—central, that is, in the sense of representing all the authorities within a large area—might be composed of representatives of each of the local authorities concerned, who should be asked to examine the local budget from a broader and possibly less parochial point of view, and to consider the effects, both present and future, upon the rate-paying community as a whole. He understood Mr. Baines to say that that was in effect done by the London County Council in the case of the Borough Councils, and that before fresh obligations were incurred, the total indebtedness of the local rates was taken into consideration. He was doubtful whether this control extended to the Metropolitan Asylums Board and the Boards of Guardians within the county area, but if it did, then it would seem to be in a small way an example of the control which in an extended form he had ventured to suggest. He did not know that the suggestion, owing to the difficulty of carrying it out, was of any value, but a review of the expenditure and indebtedness, such as might be presented in the published reports of the suggested authority, could hardly fail to be useful, and would tend to the strengthening of that local interest and control to which Mr. Brabrook and several speakers had referred, by placing before the ratepayer a succinct summary of the financial position of each district.

## PRODUCTION and CONSUMPTION of MEAT and MILK.

## SECOND REPORT

*From the Committee<sup>1</sup> Appointed to Inquire into the Statistics available as a Basis for Estimating the Production and Consumption of Meat and Milk in the United Kingdom.*

(Presented 17th November, 1903).

The First Report, communicated to the Annual General Meeting last year,<sup>2</sup> stated that it was proposed to supplement the returns then received from farmers and butchers by further detailed inquiries on particular points, and also by an attempt to collect definite statements of the consumption of meat and dairy products in separate households.

This having been done, the inquiries of the Committee have now been carried as far as appears possible. It must be admitted that any amount of statistical data which is likely to be obtained in this manner may be open to criticism on the ground of insufficiency; but it is at least certain that a very much more substantial basis of ascertained facts has been accumulated, as the result of the inquiries of the Committee, than has ever previously been available for the purpose of forming an estimate on the subjects referred to them.

In any case, the Committee consider that the facts elicited are sufficient to enable a reasonable judgment to be formed, and they have therefore authorised the preparation of the present report, to the general conclusions of which they assent.

For convenience, this report is confined to the question of the production and consumption of meat, and a further report will be presented at a later date dealing with milk, butter, and cheese.

<sup>1</sup> *Members of Committee:* W. H. Barfoot-Saunt, Sir James Blyth, Bart., Major Craigie, C.B., R. F. Crawford, A. Wilson Fox, C.B., Professor W. Fream, LL.D., George Goodsir, R. Henry Rew, H. Llewellyn Smith, C.B., W. Somerville, D.Sc., G. Udny Yule.

<sup>2</sup> "Journal of the Royal Statistical Society," vol. lxx, part ii.

In a "Memorandum on some Estimates made by various Authorities of the Production of Meat and Milk," published in the *Journal* of the Society for December last,<sup>3</sup> the leading features of the recent history of inquiries into the subject were collated for convenient reference. The valuable assistance which had then been rendered by Mr. R. E. Turnbull was therein recognised, and the Committee regret that he was unable, for personal reasons, to remain a member. The present opportunity may, however, be taken to place on record the fact that all investigators into the question of the home supplies of food are greatly indebted to the ingenious and painstaking calculations which, at various times, Mr. Turnbull has applied to the elucidation of this question. The results of Mr. Turnbull's labours were placed unreservedly by him at the disposal of the Committee, and due weight has been given to his suggestions in the preparation of this report.

#### *Number of Animals Slaughtered.*

The First Report described a method of ascertaining the numbers of cattle, sheep, and pigs respectively slaughtered by utilising the age classification of the Agricultural Returns. That method, while theoretically sound, has the disadvantage of being too greatly dependent upon the absolute accuracy of the age-grouping of the animals as stated by the owners in the Agricultural Returns—an accuracy which can only be regarded as approximate, and may be greater in some years than in others—and it also involves greater complexity than is desirable in the calculation. A more simple method has therefore been adopted, which has the advantage of being applicable to cattle, sheep, and pigs alike. To the total number enumerated at the beginning of the year, add the estimated number born during the year, deduct the estimated number of deaths by accident or natural causes, the number exported during the year,<sup>4</sup> and the number surviving at the end of the year (i.e., the total number returned), and the remainder is the number slaughtered for food.

It may be mentioned that it was not until 1901, when the live stock returns of Ireland were brought, by the Agricultural Department of that country, into line with those of Great Britain, by distinguishing the number of breeding ewes and of breeding sows, that the method now proposed became feasible. In applying the method to the returns for years previous to 1901, it is necessary to assume that the proportion of ewes and sows respectively in Ireland was the same as it is now found to be.

<sup>3</sup> "Journal of the Royal Statistical Society," vol. lxx, part iv.

<sup>4</sup> The average numbers exported annually during the five years 1898-1902 were: cattle, 2,578; sheep, 5,854; pigs, 540.

In arriving at estimates of the average rate of mortality (i.e., deaths by accident or natural causes), and of the percentage of births, regard must, primarily, be had to the conclusions suggested by an examination of the returns received from stock-owners.

*Cattle.*—The returns from 175 herds, comprising 17,092 animals, indicate an average mortality of 2·6 per cent. among cattle over 1 year, while the separate returns of “calves” born and died indicate a mortality of 7·4 per cent. The average mortality among cattle of all ages is 3·8 per cent. It seems clear that the returns of deaths among cattle under 1 year and among “calves” overlap. The “calf” mortality may be taken to apply in the main to animals of considerably less than 1 year, and the figures suggest, what is no doubt the fact, that the death-rate is much greater among calves of a few weeks or months old than among older animals. Some difficulty would arise in applying these exact percentages to the number of cattle enumerated at a given date, and also to such calves as are born after one enumeration and do not survive until the next, but the Committee are of opinion that 4 per cent. may be taken as a fair deduction to be applied all round.

For the purpose of ascertaining the number of unenumerated calves, it is necessary to estimate the number annually born, and for this purpose the returns afford a basis for estimate. From 129 returns giving the number of cows and heifers in milk or in calf on the 4th June, and also the number of calves born on the farm during the ensuing twelve months, it appears that the percentage of births was nearly 87 per cent. It seems evident that some of these returns have been affected by the inclusion of fresh-calved cows which were dried off and sold during the year, or by the buying in, during the year, of in-calf cows or heifers. This fact does not in itself disturb the representative character of the returns, but there is reason to believe that a somewhat undue proportion of dairy herds should be allowed for, and consequently four returns which appear to be exceptional may be eliminated. The result is to increase the proportion of births to 90 per cent., thus allowing 10 per cent. for barreners and abortion, and this in the opinion of the Committee may be accepted as a fair average.

On this basis a calculation of the total number of cattle slaughtered during the past five years would stand as follows :—<sup>5</sup>

<sup>5</sup> In all cases the year is reckoned from June to May, as the Agricultural Returns are collected on 4th June.

[000's omitted.]

	1898-99.	1899-1900.	1900-01.	1901-02.	1902-03.	Average for Five Years 1898-1903.
Total cattle enumerated at beginning of year ....	11,149,	11,845,	11,455,	11,478,	11,377,	11,361,
Number of calves born, 90 per cent. of cows and heifers .....	3,682,	3,720,	3,687,	3,692,	3,676,	3,681,
Less mortality at 4 per cent. ....	14,781, 591,	15,065, 603,	15,142, 606,	15,170, 607,	15,053, 602,	15,042, 602,
Less number enumerated at end of year or ex- ported during the year	14,190, 11,348,	14,462, 11,458,	14,536, 11,480,	14,563, 11,379,	14,451, 11,411,	14,440, 11,415,
Total cattle slaughtered ....	2,842,	3,004,	3,056,	3,184,	3,040,	3,025,
Per cent. of number enumerated .....	25.5	26.5	26.7	27.7	26.7	26.6

The total number of cattle of all ages slaughtered having been thus ascertained, it remains to estimate the relative proportions of beef cattle and veal calves included therein.

Some indication of the number of calves slaughtered may be obtained by deducting from the number estimated as born during the year (after allowing for deaths) the number returned as under 1 year at the end of the year. From the result of this method, compared with independent estimates supplied by butchers and others, it appears reasonable to assume that on an average out of every 100 cattle of all ages slaughtered, 70 will be beef cattle and 30 calves. On this basis the figures would stand thus for the past five years :—

Year.	Beef Cattle.	Calves.
1898-1899 .....	1,989,000	853,000
'99-1900 .....	2,103,000	901,000
1900-'01 .....	2,139,000	917,000
'01-'02 .....	2,229,000	955,000
'02-'03 .....	2,128,000	912,000
Average five years 1898-1902 ....	2,118,000	907,000

*Sheep.*—The returns of mortality among sheep represent 124 flocks, numbering altogether 89,382 animals, on the 4th June. The deaths during the year applied to the number at the beginning of the year works out at 5.8 per cent. for sheep under

1 year, and 3·5 for sheep over 1 year. Separate returns for lambs show a death-rate of 5 per cent. on the number born during the year. A general rate of  $4\frac{1}{4}$  per cent. may be fairly adopted.

As regards the number of lambs born, the returns show that 30,847 ewes produced 33,382 lambs, or a percentage of 108. There are, however, reasons for believing that this is somewhat too few, and it is probable that as farmers commonly reckon the number of lambs reared rather than the number actually born, the returns in some instances may be defective from that cause.

A number of replies to inquiries made on behalf of the Committee from individual flock masters of great experience, show that in many districts the accepted estimate of an average fall of lambs would be much higher than the figure just indicated: in some cases these estimates are as high as 150 per cent., and it may be observed that in Ireland a prominent breeder of Roscommon sheep states that from 145 to 150 per cent. would represent the average crop of lambs for that breed. Actual statistics of the number of lambs reared show a percentage of 132·76, over a period of fifteen years, in flocks of pure-bred Suffolk sheep, while in a competition organised by the Hampshire Down Sheep-Breeders' Association, 56 flocks, representing 26,785 sheep, returned an average of 116·82 per cent. of lambs reared.

These figures are exceptional as applying to pure-bred flocks, kept under the most favourable conditions, and a large allowance must be made for hill flocks and for less prolific breeds. But taking all the facts into account, the Committee feel justified in raising the figure suggested by the returns to 112 per cent. of the number of ewes.

It is to be noted that the percentage of lambs born must be calculated on the number of ewes returned at the end of the year, as the number of ewes returned at the 4th June following the lambing season more nearly represents the mothers of the lambs born that spring than the number returned in June of the preceding year.

The calculation of the total number of sheep and lambs slaughtered in the United Kingdom is as follows:—



[000's omitted.]

	1898-99.	1899-1900.	1900-01.	1901-02.	1902-03.	Average for Five Years 1898-1903.
Total number of sheep enumerated at beginning of year .....	31,102,	31,680,	31,055,	30,880,	30,057,	30,945,
Number of lambs born during the year, 112 per cent. of ewes enumerated at end of the year }	13,670,	13,642,	13,309,	13,085,	12,863,	13,314,
Less mortality at 4½ per cent. ....	44,772, 1,903,	45,323, 1,926,	44,364, 1,885,	43,915, 1,866,	42,910, 1,824,	44,259, 1,881,
Deduct number enumerated at the end of the year or exported during the year }	42,869, 31,690,	43,397, 31,062,	42,479, 30,834,	42,049, 30,060,	41,096, 29,663,	42,378, 30,662,
Total number of sheep and lambs slaughtered }	11,179,	12,335,	11,645,	11,989,	11,433,	11,716,
Per cent. of number enumerated .....	35.9	39.0	37.5	39.0	38.0	37.9

An estimate of the proportion of the total number slaughtered which are lambs, sold to be consumed as lamb, presents special difficulties. A certain number are killed without ever entering into the Agricultural Returns, and a further number are killed after being enumerated. Special inquiries made from individual flockmasters as well as from butchers and dealers, indicate the wide diversity of practice which prevails in different districts and among various breeds of sheep, but on consideration of such information on the point as is available, the Committee believe that the estimate that 20 per cent. represents the proportion of the whole number of sheep and lambs slaughtered which are sold for lamb may be taken as substantially correct. The relative numbers of sheep and lambs annually slaughtered would stand thus:—

Year.	Sheep.	Lambs.
1898-99 .....	8,943,000	2,236,000
'99-1900 .....	9,868,000	2,487,000
1900-01 .....	9,316,000	2,329,000
'01-02 .....	9,591,000	2,398,000
'02-03 .....	9,146,000	2,287,000
Average of five years 1898-1902	9,373,000	2,343,000

*Pigs.*—In the case of pigs the returns of births, although less numerous than in the case of either cattle or sheep, appear to afford a reasonable basis for calculation. In 48 herds, having a total of 240 sows, the number of pigs born in the year was slightly over 10 per sow. There is reason to believe, however, that farmers do not always count those pigs which survive birth by only a few hours or days, and the Committee therefore consider that an average of 11 per sow may be adopted. It must, of course, be remembered that sows frequently produce more than one litter in a year, and probably it may be assumed that on an average every two sows will produce three litters in twelve months.

The rate of mortality during the year, reckoned on the herd enumerated at the beginning of the year, is 9·1 per cent., while the returns of deaths among those born during the year works out at 8·5 per cent. An average of 9 per cent. may therefore be fairly adopted.

The estimate of pigs slaughtered stands as follows:—

[000's omitted.]

	1898-99.	1899-1900.	1900-01.	1901-02.	1902-03.	Average for Five Years 1898-1903.
Total enumerated at be- ginning of year .....	3,719,	4,004,	3,664,	3,411,	3,640,	3,688,
Number of pigs born at 11 per sow .....	5,483,	5,765,	5,170,	4,973,	5,419,	5,362,
Less mortality at 9 per cent.	9,202, 828,	9,769, 879,	8,834, 795,	8,384, 755,	9,059, 815,	9,050, 815,
Less number enumerated at end of year.....	8,374, 4,004,	8,890, 3,664,	8,039, 3,411,	7,629, 3,640,	8,244, 4,086,	8,235, 3,761,
Total slaughtered .....	4,370,	5,226,	4,628,	3,989,	4,158,	4,474,
Per cent. of number enumerated .....	117·5	130·5	126·3	116·9	114·2	121·3

It must be remembered that while the numbers of cattle and sheep enumerated are exhaustive, this is not the case with pigs, a considerable number of which, kept by cottagers and others, are not included in the Agricultural Returns.

#### *Average Carcass Weights.*

The validity of any estimate of meat production must depend in an important degree on the relative accuracy of the average weight per animal which is adopted.

The difficulties are great in arriving at a fair estimate of the average weight of the animals of all kinds, and of widely varying age and condition, in the United Kingdom, but the inquiries of the Committee have resulted in the acquisition of a large amount of valuable information on this point, and the returns received form on the whole a sound basis for estimate.

The mean of 74 returns for bullocks and heifers gives an average weight of 666 lbs. of dressed carcass per head. The returns relating to draft cows and bulls are naturally meagre, as the butchers who are most likely to afford assistance in an inquiry such as this, are not as a rule those who deal extensively in "bull-beef" or "cow-beef." The average weight indicated by eight returns for draft cows is 63 lbs. less, and for bulls 224 lbs. more, than the corresponding figure for the general bulk of beef cattle. The number of bulls slaughtered annually is very much less than the number of draft cows.

The seventy-four returns of the estimated weight of bullocks and heifers represent a total of 81,315 animals. They may perhaps best be considered as each alike representing the opinion, based on actual experience, of an expert, and so regarded, it is justifiable to treat all as of equal value, and to assume that the mean of the whole will give a fairly trustworthy average for the country.

If, however, each return were weighted by the number of animals upon which the estimate was professedly based, the average would be 670 lbs.

The geographical distribution of the returns from butchers is, of course, unequal, many counties being unrepresented, while Lancashire and Yorkshire are largely represented. In the absence of any grounds for believing that the animals slaughtered in those parts of the country for which no estimates are available, differ materially in average weight from those slaughtered in the districts for which returns have been obtained, this inequality of distribution is immaterial: but an attempt has been made to weight the figures in two ways, so as to ascertain the extent of any error which might be considered to arise from this cause. An average weight being taken for each county represented in the table, a corresponding figure may be assumed for other counties in which the class of cattle is known to have a general resemblance, and the averages then weighted by the number of cattle shown in the Agricultural Returns for each county of England, Wales, and Scotland being treated as units: the result would be to give an average of 673 lbs. But it may be said that as the returns indicate the counties in which cattle were slaughtered, and not where they were bred, it would be more

appropriate to weight them by the number killed in each county. This of course is not known, but as the number consumed is naturally fixed by the number of consumers, the object in view may be obtained by weighting each county estimate by the population of the county. By this method an average of 676 lbs. would be arrived at. It is questionable, however, whether any method of weighting gives a result less free from error than the simpler method of treating each "butcher's" return as an expert estimate of equal value.

In this connection a definite statistical basis is obtainable from the returns received by the Board of Agriculture under the Weighing of Cattle (Markets and Fairs) Act for each of the years 1893 to 1902. These give the average weight of fat cattle, as actually recorded on the weighbridge, exposed for sale at the scheduled markets of Great Britain. By converting the live weight figures on the assumption that 60, 57, and 54 per cent. will represent the carcass weights of first, second, and third quality cattle respectively, the following averages (based on the returns for 1900-02, and founded on the actual weighing of 286,020 cattle) are shown:—

Quality.	England.	Scotland.	Great Britain.
	lbs.	lbs.	lbs.
First .....	689	714	697
Second .....	606	646	638
Third .....	582	635	620
Means .....	626	665	652

Neither in the returns received by the Committee, nor in those just referred to as made under the Weighing of Cattle Act, is Ireland represented. It is to be remembered, however, that large numbers of Irish cattle are consumed in Great Britain, and it may fairly be assumed that many of the "butchers'" returns received by the Committee—especially from Lancashire and Scotland—comprise a proportion of Irish animals.\*

Returns of live weights are, however, collected under the Weighing of Cattle Act from Dublin and Belfast, and a calculation made upon similar lines to that above explained gives for 4,249 fat cattle sold during the year 1902 the following average carcass weights: first quality, 696 lbs., second quality, 609 lbs., third quality, 557 lbs., mean 621 lbs.

\* In 1902, 874,080 cattle were imported from Ireland to Great Britain, and of these 306,892 were classed as "fat."

On a careful consideration of these data, the Committee adopt an estimate of 660 lbs. as the average weight of beef cattle slaughtered in the United Kingdom. In view of the results shown by the British and Irish live weight returns it seems impossible to adopt a higher figure.

The returns of the average weight of calves give 102 lbs. as the mean of fifty-one returns. No numbers are available in this case for weighting the returns, nor is any information available for Ireland. A rough weighting of the returns by the population of the counties represented would tend to somewhat raise the average owing largely to the comparative heavy weight for London. On the other hand, it is probable that the average weight of calves killed in Ireland would be smaller than in Great Britain. There is also a further consideration: it is known that in dairying districts calves are disposed of almost immediately after birth, and without being in any way fattened for the butcher. It is evident that these are not included in the returns received, but nevertheless an allowance must be made for them in estimating an average weight.

The Committee therefore consider that 95 lbs. is a reasonable estimate to adopt as the average weight per head of calves slaughtered.

The returns of the estimated weights of sheep and lambs received give as the means of the averages in each class 64 lbs. for wethers (69 returns), 57 lbs. for ewes (22 returns), and 41 lbs. for lambs (58 returns).

If the returns for wethers be weighted by the numbers on which the estimates are based, an average of 66 lbs. is obtained; and if a process of weighting each county by the number of sheep and by the number of consumers be adopted, as in the case of cattle, the averages obtained are 65 and 68 lbs. respectively.

The returns under the Weighing of Cattle Act are much more meagre for sheep than for cattle, but certain figures which are available for six markets in Great Britain indicate, on a three years' average, a mean live weight of 114 lbs. for first and second quality sheep respectively. The information for third quality is insufficient to form an average, but, so far as it goes, it indicates a lower weight. The average proportion of carcass to live weight is more difficult to estimate for sheep than for cattle, but 50 per cent. is frequently assumed, and it would hardly be put higher than 55 per cent. A live weight average of 114 lbs., therefore, would imply a carcass weight of from 57 to 63 lbs.

Returns under the Weighing of Cattle Act of the weight of sheep at Dublin market in 1902 give means of 134 lbs. for wethers

and hoggets, 151 lbs. for ewes, and 84 lbs. for lambs, which may be estimated to represent carcass weights of (say) 67, 75, and 42 lbs. respectively. These would probably be above the average for Ireland generally.

The Committee consider that 65 lbs. may be accepted as fairly representing the average weight of sheep (excluding lambs), while for lambs they adopt an average of 40 lbs. per head.

The returns of weight in the case of pigs present greater difficulties than those of cattle and sheep, by reason of the uncertainty which exists in the definition of bacon pigs and porkers respectively. The returns give a mean average of 213 lbs. for bacon pigs, and of 104 lbs. for porkers, the number of returns being 41 and 44 respectively.

An estimate received from an important firm of bacon curers in the west of England, gives the average weight of pigs killed for bacon purposes in the United Kingdom as 160 lbs. Another independent estimate, received from a leading firm of pork salesmen in Smithfield Market, of the weight of pigs killed for purposes other than bacon curing, gives the precise figure (105 lbs.) shown by the returns.

In considering the returns it is to be noted that Lancashire and Yorkshire furnish one-half of the whole number, and that the breed of pigs commonly kept in the north of England is, as a rule, larger than in many other parts of the country.

The Committee on the whole consider that 200 lbs. may be taken as a reasonable estimate of the average weight of pigs killed for bacon, and 100 lbs. for porkers. On the assumption that the number of pigs killed for pork probably amounts to two-thirds of the total number annually slaughtered, they adopt 135 lbs. per head as an all-round average.

#### *Total Quantity of Meat Produced.*

On the basis of the foregoing estimates of numbers and weights, the total amount and average quantity per head of meat annually produced in the United Kingdom stand as follows, on the average of the five years 1898-99 to 1902-03, and also for the latest year:—

Description.	Five Years' Average.		1902-03.	
	Total Quantity.	Average per Head.	Total Quantity.	Average per Head.
Beef.....	Tons. 624,054	lbs. 33·82	Tons. 627,000	lbs. 33·34
Veal .....	38,466	2·08	38,679	2·06
Total beef and veal .....	662,520	35·90	665,679	35·40
Mutton .....	271,979	14·74	265,409	14·11
Lamb .....	41,843	2·27	40,832	2·17
Total mutton and lamb ....	313,822	17·01	306,241	16·28
Bacon and pork.....	269,578	14·61	250,594	13·32
Total meat .....	1,245,920	67·52	1,222,514	65·00

### Imports.

To ascertain the total consumption of meat it is of course necessary to add the quantity imported. The figures for beef, mutton, and lamb, and pig meat are readily obtained from the Annual Statement of Trade and the Trade and Navigation Accounts, but an estimate is required to ascertain the quantity of meat represented by the cattle and sheep which are imported alive and slaughtered at the ports.\*

The total quantity of meat (live and dead) imported (less dead meat exported) in each of the years 1898-99 and 1902-3, with the amount per head of the population, has been as under:—

Years ended 31st May.	Population Estimated to 1st December.	Imports of Meat, including that represented by Animals Imported Alive.				Proportion per Head of Population.			
		Beef.	Mutton.	Pig Meat.	Total, Less Exports of Dead Meat.	Beef.	Mutton.	Pig Meat.	Total, Less Exports of Dead Meat.
		Tons.	Tons.	Tons.	Tons.	lbs.	lbs.	lbs.	lbs.
1898-99 ....	40,575,524	860,343	189,642	428,803	971,657	19·89	10·47	23·67	53·59
'99-1900 ..	40,951,068	393,868	191,862	426,156	1,014,932	21·55	10·49	23·31	55·52
1900-'01 ..	41,322,611	416,148	194,819	424,547	1,050,729	22·56	10·56	23·01	56·96
'01-'02 ..	41,714,359	400,720	184,931	422,205	1,026,470	21·52	9·93	22·67	55·12
'02-'03 ..	42,127,529	360,923	204,496	350,257	942,065	19·19	10·87	18·62	50·09
Average ....	41,338,218	386,400	193,150	410,394	1,001,171	20·94	10·47	22·24	54·25

\* The Board of Agriculture and Fisheries have recently revised the estimates accepted for many years as a basis for converting the imports of cattle and sheep into their equivalents in dead meat, and the figures now adopted by that Department have been used in this report.

As the exports of beef, mutton, and pig meat are not distinguished, the deduction (which amounts on the five-year average to  $1\frac{1}{2}$  lbs. per head) can only be accurately made from the totals. Meat, "unenumerated," which amounts on a five years' average to 2'12 lbs. per head of population, can also be included only in the totals.

It is to be observed that both these items comprise a certain quantity of tinned and other meat which is not included in the calculation of production or consumption.

### *Total Supply.*

Adding the estimated home production to the imports, the average annual total supply for the United Kingdom during the five years ending 31st May, 1903, and for the latest year, has been:—

	Five Years' Average.		1902-03.	
	Total.	Per Head of Population.	Total.	Per Head of Population.
	Tons.	lbs.	Tons.	lbs.
Home .....	1,245,920	67'52	1,222,514	65'00
Imported .....	1,001,171	54'25	942,065	50'09
Total .....	2,247,091	121'77	2,164,579	115'09

### *Returns of Meat Consumption.*

The average annual meat supply per head for the whole population being thus indicated, it remains to be seen how far the results obtained by the foregoing calculations are corroborated by the returns of the actual meat consumption in individual households.

It is evident that the results of any inquiry of this nature must be used with great caution. An average obtained from a small number of households—a minute fraction as compared with the total—is obviously a somewhat unsafe foundation for a calculation of the consumption of the whole nation. Nevertheless, the returns received form an interesting body of statistics, which, when fairly considered, provide, within due limits, a useful check on the calculation of production.

The forms of return, which were circulated among Fellows of the Society and others interested, asked for statements for each of four successive weeks of the quantity of beef, veal, mutton, lamb, pork, bacon, and ham, and pork and beef sausages consumed in the household, the quantities to represent the weight of uncooked meat, including bone and waste. Tinned and potted meats,



hearts, tongues, heads, liver, tripe, sweetbreads, and similar articles were excluded. The numbers of persons (including visitors and servants) forming the household in each week was asked for, and it was also requested that any variation in the numbers should be noted, and that if any members of the household regularly took meals away from home, it should be so stated.

The total number of returns received was 247, and (with the exception of 8<sup>6</sup>) they were almost invariably filled up with evident care, and signed by the head of the household. Of the 247, 24 were double returns, representing the consumption in summer and winter respectively in the same household, so that the total number of households represented is 223. The greater number of the returns related to periods falling within the year ending 31st May, 1903.

Many parts of the country are represented, including London, Liverpool, Edinburgh, Manchester, Hull, Sheffield, Plymouth, Bristol, Aberdeen, Birmingham, Lymington, Hove, Colchester, Watford, Croydon, Wakefield, Grimsby, Market Harborough, Bromley, Harpenden, Maldon, Norwich, Huddersfield, Burton-on-Trent, and other towns and rural districts in Great Britain.

The classes of the community represented are as varied as their places of residence. Among them are landed proprietors, members of Parliament, merchants, shipowners, railway directors, civil servants (of all ranks), retired officers of the army, clergymen, barristers, medical men, solicitors, civil engineers, bank managers, journalists, accountants, manufacturers, farmers, clerks, buyers (in various trades), salesmen, warehousemen, foremen, electricians, compositors, printers, brass finishers, painters, decorators, joiners, sugar boilers, silver refiners, shipwrights, labourers, and farm labourers.

It is obvious that no general average of so wide a diversity of returns would be of any value, but it is possible to obtain some indication of their relative value as typical of the various classes of the community by arranging them roughly in groups.

The most important group is, of course, that which embraces the wage-earning class, and fortunately this is the most readily distinguishable. The number of working-class returns, Group I, received is 82, 11 of these being double returns, for winter and summer respectively.

The group (II) just above the wage-earning class—what may be termed the lower middle class—is represented by 60 households, and from 7 of them double returns, for winter and summer, were

<sup>6</sup> One of these was filled up "no household; no consumption; dine at club;" and the others were, for one reason or another, not available for tabulation.

received. It includes clerks, insurance agents, trades union secretaries, small tradesmen, and persons engaged in subordinate capacities in commercial life.

A fairly distinct group (III) is formed by the professional classes, although no doubt this comprises persons of very different incomes. With these are grouped a few of the commercial class, who may be assumed to occupy a somewhat similar position as regards food consumption. There are 46 returns in this group, with 12 double returns.

The last group (IV) comprises 32 returns, with 4 double returns. It includes the households of those who may be described as belonging to the upper and upper middle classes.

The annual average consumption for each group has been arrived at by dividing the total quantities of meat consumed by the total number of persons represented. The average yearly consumption thus shown is as follows:—

	Lbs. per Head.	
	Per Annum.	Per Week.
Group I. Artizans, mechanics, and labourers....	107	2·06
„ II. Lower middle class .....	122	2·35
„ III. Middle class .....	182	3·50
„ IV. Upper „ .....	300	5·77

It is necessary to take out from Group I the returns from persons describing themselves as “labourers,” or “agricultural labourers.” The number is small, but they may perhaps be taken as fairly representative. There are only 4 returns from agricultural labourers, which come from Kent, Essex, and Herts, and in two cases where wages are mentioned, it is stated that they are 13s. and 16s. per week respectively.<sup>9</sup> On the whole they probably represent a rate of consumption below rather than above the average.<sup>10</sup> The town labourers’ returns are disturbed by the fact that they comprise two from the same district of Liverpool, which show an exceptionally high rate of consumption. It seems desirable to omit one of these for the purpose of arriving at an average, and with this adjustment the following sub-division of Group I may be made:—

	Lbs. per Head.
(a.) Labourers .....	86
(b.) Artizans and labourers .....	107

<sup>9</sup> These sums represent, of course, the weekly cash wage, and not the total weekly earnings.

<sup>10</sup> The average is 55 lbs. per head. The average yearly consumption of agricultural labourers indicated as the result of the inquiries made by Mr. Wilson Fox, C.B., was 62 lbs. per head.

It now remains to give the relative values or weights to these groups, so as to ascertain how far the whole may be taken as representing the community generally. It is unnecessary to point out the difficulties which arise in such an attempt. The proportion which the manual labour class bears to the whole population was estimated by Mr. Dudley Baxter in his famous paper on *The Taxation of the United Kingdom*, read before this Society in 1869, at 73 per cent., and later authorities have accepted this estimate as substantially correct.

A rough method of classification, which may be sufficient for the present purpose, is available in the number and annual value of private dwelling houses shown in the Returns of the Inland Revenue Commissioners. Adding to the number of houses assessed to inhabited house duty (exclusive of artisans' dwellings, residential shops, hotels, public houses, farm houses, and lodging houses), the numbers exempt from duty, the following percentages are obtained :—

Under 10 <i>l.</i> ... ..	47 per cent.	25 <i>l.</i> and under 41 <i>l.</i> ...	8 per cent.
10 <i>l.</i> and under 15 <i>l.</i> ...	23 "	41 <i>l.</i> " 61 <i>l.</i> ...	3 "
15 <i>l.</i> " 20 <i>l.</i> ...	12 "	Over 61 <i>l.</i> .....	3 "
20 <i>l.</i> " 25 <i>l.</i> ...	4 "		

It will be seen that an assumption that 73 per cent. represents the working class, would agree fairly well with a calculation which puts their maximum house rent at rather more than 15*l.* per annum.<sup>11</sup>

It may be assumed, therefore, that Group I may be taken as representing 73 per cent. of the whole population. The subdivision of the group necessary to allow for a considerably larger proportion of the lower-waged labourers (agricultural and others) than is represented in the returns, may be made by taking 23 per cent. at the "labourers'" rate of consumption (86 lbs.) and 50 per cent. at the "artizans'" rate (107 lbs.). A further slight allowance in the same direction is made by including the "labourers'" returns in the general average for Group I (b).

The remaining 27 per cent. of the population may be allotted in the proportions of 15 per cent. to Group II (corresponding roughly to the 15*l.* to 25*l.* inhabited house duty scale), 7 per cent. to Group III, and 5 per cent. to Group IV.

Applying these percentages to the rate of consumption stated above for each group, an average per head for the whole popula-

<sup>11</sup> In the Board of Trade return, "*British and Foreign Trade and Industry*" (Cd-1761), it is estimated that 5*s.* to 6*s.* per week represents the average rental of a London working class family, and 4*s.* to 5*s.* in urban districts outside London. In rural districts of course rents are lower.

tion of 119'32 lbs. is arrived at, or 4'23 lbs. per head more than is indicated by the production calculation for the year 1902-03, and 2'45 lbs. per head less than the five years' average.

In dealing with calculations of this magnitude, it must be recognised that anything like precise agreement could be little more than a coincidence. All that the somewhat scanty data relating to consumption can be expected to show is, that, fairly considered, they do not conflict with, but on the whole tend to corroborate, the calculation of home production.

The returns of consumption should show a somewhat higher rate per head than is indicated by the production calculation, by reason of the omission from the latter of a certain number of pigs not included in the agricultural returns. But, on the other hand, this omission is perhaps balanced by the fact that the consumption returns relate, in a preponderating degree, to the summer months.

Where comparison is possible between summer and winter returns from the same households, it appears that the meat consumption on the whole is about 10 per cent. greater in winter than in summer, due no doubt to the larger consumption of other food (especially poultry) in the summer months.

It may be added that for the same reason it is impossible to expect an exact relation between the consumption and production figures of the different classes of meat. In the case of beef there is a tolerably close agreement; of mutton and lamb, however, considerably more, and of bacon and pork considerably less, are consumed, according to the returns, than is indicated by the calculation of supplies. But it appears that mutton and lamb form a much larger percentage of the whole meat consumption in summer than in winter, when bacon and pork, to a considerable extent, take their place.

On the whole, therefore, it may be claimed that the inquiries of the Committee have resulted in the presentation of a calculation of the average annual production of meat in the United Kingdom which is in the first instance based on original data carefully compiled and considered, and that the calculation thus made, appears, at all events, to be not inconsistent with such information as is obtainable of the actual consumption of the people.

*On behalf of the Committee,*

R. H. REW.

November, 1903.

## PRODUCTION and CONSUMPTION of MEAT and MILK.

## THIRD REPORT

*From the Committee Appointed to Inquire into the Statistics available as a Basis for Estimating the Production and Consumption of Meat and Milk in the United Kingdom.*

(Presented 21st June, 1904.)

The Committee, having already presented the results of their investigations into the subject of the production and consumption of meat,<sup>1</sup> have now to report upon the other branch of the inquiry entrusted to them.

The replies to the schedule of inquiry addressed to farmers were somewhat less satisfactory with regard to milk than in the case of meat. This is, perhaps, not surprising. In regard to such questions as the average percentage of births or deaths among farm stock, not only may a comparatively small number of replies provide a fairly satisfactory basis for an estimate, but the figures given are such as may be within the recollection of farmers even in the absence of a system of book-keeping. Precise answers to questions relating to the average milk yield of cows, however, can only be expected from those owners of dairy herds who keep accurate records—a class which is perhaps not numerous—and it follows that the replies received must be regarded as in some degree representing exceptionally favourable circumstances.

The number of schedules received, on which one or more of the questions relating to milk production were dealt with, was 176, but many were incompletely filled up owing to the absence of precise records of some of the particulars required.

The milk-producing animals of the country in any year are represented by the number of "cows and heifers in milk or in calf," as shown in the Agricultural Returns on 4th June, which during the past five years has been as under:—

<sup>1</sup> See Second Report, pp. 368—384.

[000's omitted.]

Year.	England and Wales.	Scotland.	Great Britain.	Ireland.	United Kingdom.
1899.....	2,231,	440,	2,671,	1,444,	4,133,
1900.....	2,187,	484,	2,621,	1,458,	4,097,
1901.....	2,168,	434,	2,602,	1,482,	4,102,
1902.....	2,117,	439,	2,556,	1,511,	4,084,
1903.....	2,150,	437,	2,588,	1,495,	4,101,
Average ....	2,171,	437,	2,607,	1,478,	4,103,

To the question in the schedule as to the number of heifers in calf with their first calf—which had, therefore, not contributed to the milk supply at the time of enumeration—119 replies were given by farmers in Great Britain. In these cases the proportion which “first calf” heifers bore to the total as returned on the 4th of June was:—

	Per cent.
England and Wales .....	20·6
Scotland .....	19·0
Great Britain.....	20·3

The majority of these replies gave the figures for two enumerations, that is at an interval of one year, and the average based upon them may be reasonably accepted. It appears to indicate that one-fifth of the cow stock is renewed annually, or, in other words, that the average milking life of a cow is about five years. As the quantity of milk given by a heifer after her first calf is comparatively small,<sup>2</sup> this fact has an important bearing on the average yield.

Difference in breed materially affects the quantity of milk given by a dairy herd. The distribution of breeds in the returns received by the Committee, taking into account only those for which the particulars of numbers and quantity are sufficiently precise to be available, is indicated in the following list; but it must be remembered that in only a few cases were the herds pure-bred, and that the name of the breed represents only the general character of the animals.

Shorthorns .....	55	Channel Islands with others .....	8
Shorthorns with others .....	15	Ayrshires .....	15
Jerseys .....	3	Ayrshires with others .....	6

Among the other breeds represented in one or two returns are Aberdeen - Angus, Herefords, Dutch, Galloways, South Devons, and Red Polls.

<sup>2</sup> Three heifers with their first calf are sometimes reckoned as equal in milking value to two cows in full milk.

If these figures were to be taken as representative they would indicate that something like two-thirds of the whole dairy stock of the country are of the Shorthorn type, an indication which may be considered as not unreasonable.

As the milking capabilities of different breeds vary to a considerable extent, their relative distribution is an important factor in this calculation, but there are no data upon which to found a reliable estimate of the proportion of each breed. Some idea of the relation of the average yield of different breeds may be obtained by reference to the records of the milking trials held annually at the London Dairy Show.<sup>3</sup> The following are the average daily yields of Shorthorns and Jerseys for the last six years, as compiled from the records of these trials.

Year.	Shorthorns.	Jerseys.
	lbs.	lbs.
1898.....	43·3	31·5
'99.....	46·0	31·9
1900.....	48·1	31·0
'01.....	52·2	28·7
'02.....	46·9	30·6
'03.....	54·1	31·5
Averages .....	48·4	30·9

The actual yields, being those given by specially selected animals, are of no value for the present purpose, but the relation of the breeds to each other would probably remain the same for ordinary cows as for those of exceptional capabilities. The two breeds represented above are both of great importance as contributors to the supply of dairy produce—the Shorthorns especially for milk and the Jerseys especially for butter. It will be observed that the relative yields—taking account of quantity only—differ appreciably in successive years, but on the mean of six years it appears that the average yield of Jerseys is less than that of Shorthorns by about 36 per cent.

The most disturbing element in a calculation of average milk yield is the fact that a considerable proportion of the cows and heifers enumerated in the Agricultural Returns do not contribute to the milk supply of the population at all. Owned by farmers whose object is the rearing of young stock for grazing purposes, many cows are never milked, but merely suckle their calves. This method of management still prevails largely in some districts, while in others the calves are allowed to take a very heavy toll before their mothers contribute to the human demand

<sup>3</sup> "Journal of the British Dairy Farmers' Association," vol. xvii, 2 C 2

for milk. Those herds in which there is no effective milk production are very little represented in the replies dealt with by the Committee, although in some cases a proportion of the cows appear to have been exclusively devoted to calf rearing. An attempt was made to obtain information as to the amount of milk fed to calves. Definite particulars on this point were given in sixty-four returns from Great Britain, and the quantity ranged from nil (in twenty cases) to over 50 per cent. of the milk production of the herd in one case. Where it was stated that no milk is given to calves, the statement is probably not intended to be taken quite literally, but may be regarded as implying that the quantity is negligible. Taking the average of the sixty-four returns, the proportion of the milk fed to calves was 3.3 per cent.; taking the average of those 44 herds in which the calves received some share of the milk, the proportion was 5 per cent. It is generally agreed that there has been in recent years an increasing tendency among farmers to restrict the quantity of whole milk fed to calves by the use of substitutes for the mother's milk.

The average yield per cow as indicated in the returns received was as follows: (a) being based on the number of cows and heifers in milk and in calf as returned on 4th June, and (b) on the number of cows stated to be actually milked, the herds included in the two statements being substantially, but not precisely, the same.

(a) *Average Yield per Annum per Cow Enumerated.*

	Number of Herds.	Number of Cows and Heifers.	Total Milk.	Average per Cow.
			Gallons.	Gallons.
England .....	56	3,149	1,464,015	465
Scotland .....	21	811	418,825	516
Great Britain ....	77	3,960	1,882,840	475

(b) *Average Yield per Annum per Cow Milked.*

	Number of Herds.	Number of Cows and Heifers.	Total Milk.	Average per Cow.
			Gallons.	Gallons.
England .....	59	3,217	1,662,626	517
Scotland .....	23	1,195	697,772	584
Great Britain ....	82	4,412	2,360,398	535

In 80 returns, both the number of cows and heifers as enumerated at the beginning of the year, and the number actually milked during the ensuing year are given. In nearly



half of these herds the two figures are identical, but on the average of the whole the number actually milked was 88 per cent. of the number enumerated. In some cases the difference was considerable and must be accounted for by a proportion of the cows and heifers which did no more than rear their calves, and by others which had been served proving not to be in calf. In a few instances the number actually milked exceeded the number enumerated, in consequence, no doubt, of the practice, not infrequently adopted in milk-selling herds, of buying in fresh-calved cows and selling them when dry.

The schedule requested the owner of the herd not only to give the numbers of his cows and the actual quantity of milk produced by them, but also to state what he considered to be the average yield per cow in his own case. It is perhaps significant of the uncertainty of such opinions that in some instances the average for the herd thus stated did not agree with the average resulting from the figures previously given in the same return. As a rule the statement thus made exceeded the average arithmetically arrived at. No doubt this discrepancy arises largely from the tendency to think only of the yield of cows in full milk and to make an insufficient allowance for the effect of heifers and defective milkers in reducing the yearly average of the herds. The mean of the averages thus stated was 570 gallons per cow per annum in Great Britain.

Correspondents were also asked to state what they considered to be the average yield per cow in their district, but replies to this question were only furnished in 27 cases in Great Britain. It is difficult to draw any reliable statistical conclusions from these estimates, which generally ranged from 400 to 500 gallons, but it may be noted that for each of two representative dairying counties, Somerset and Wigtown, four independent estimates are available, the mean of which gives a figure—479 gallons—which may be considered as some guide to a general average.

In considering, upon these data, what is a reasonable figure to adopt as an average yield per cow, it is clear that the figures indicated by the returns received—in which dairy herds generally and milk-selling herds in particular predominate—must be subject to some deduction before being accepted as providing an absolute basis for the country generally. The non-milk-producing cows form a larger proportion of the total stock than in the herds for which returns are available, and it does not appear that, after allowing for calf rearing, the average yield per cow and heifer enumerated can be placed at a higher figure than 430 gallons for Great Britain.

It will be observed that no reference has been made to Ireland, which is an important factor in the milk production of the United Kingdom. The very few returns received from owners of herds in Ireland were not sufficiently numerous or representative to form the basis of an average. Fortunately, however, an estimate is available, made by the late Mr. Coyne, which may be accepted for the present purpose. In his "Report on the Agricultural Statistics of Ireland for 1902," he observed—

"There are no accurate figures available as to the average yield of milk per cow in Ireland, but from extensive inquiries, and a study of creamery statistics, I should not, taking one district with another, place it higher than 400 gallons per year."<sup>4</sup>

As the cows and heifers enumerated in Ireland form about 36 per cent. of the whole, the adoption of 400 gallons for Ireland and 430 gallons for Great Britain, gives an average of about 420 gallons for the United Kingdom, and the average annual total production of milk then stands as follows:—

Average number of cows and heifers annually } enumerated (1899-1903) .....		4,103,000
Estimated average yield .....		420 gallons
Total production of available milk per annum		1,723,000,000 "

As the average population of the United Kingdom for the five years ending 31st May, 1903, was estimated at 41,338,000 it would thus appear that the milk available for consumption in one form or another amounts to nearly 42 gallons per head per annum.

The problem remains to discover the relative proportions of this supply which are consumed as milk, cheese and butter respectively.

It must be recognised that no figures from the producers' side afford any reliable guide to an estimate. It is clear that no indication on this point for the country generally could be given by the limited number of producers who replied to the Committee, nor did the attempt which was made to obtain information from distributors furnish any adequate data.

The only line by which the problem can be attacked is that of the returns of consumption in individual households. In the case of meat these were referred to merely as corroborating a calculation of production which was in itself demonstrably reasonable. In using them, however, for the present purpose—i.e., to decide the proportion of milk made into cheese and butter—it is necessary, in view of their relative insufficiency, to do so with considerable caution, and to endeavour to correct them by such other data as may be obtainable.

The scope and character of these returns of consumption, and the method by which they have been grouped, have been described in the Second Report of the Committee.

Taking first the direct consumption of milk, the average per head for each of the groups as indicated by the returns is as follows:—

	Gallons per Head per annum.
Group I. (a.)—Labourers .....	5
(b.)—Artizans, mechanics, and labourers .....	12
„ II.—Lower middle class .....	25
„ III.—Middle class .....	39
„ IV.—Upper class .....	31

The weighted average for the whole is slightly over 15 gallons per head.

The Board of Trade recently published some returns of the consumption of food by the working classes,<sup>5</sup> which indicated an average consumption of milk per head for agricultural labourers (corresponding roughly to Group I (a) of 5 gallons, and for urban workmen (corresponding roughly to Group I (b)), of 11 gallons per head. As this group is estimated to comprise 73 per cent. of the whole population, the accuracy of the figure assumed for it is of chief importance, and the substantial agreement of these independent inquiries affords reasonable confidence in the adoption of an all round average of 15 gallons per head, of which the quantity imported is negligible (0·005 gallon).

It may be added that Mr. Turnbull, who has given great attention to the subject of milk production, forwarded the results of some inquiries made by him in Hull, where in a time of slack trade he estimated the average consumption per head to be  $13\frac{3}{4}$  gallons. In a letter sent to the Committee he expressed the opinion that it is possible that the average consumption of new milk might reach  $15\frac{3}{4}$  gallons for the country generally, although he “hesitated to go beyond”  $14\frac{1}{4}$ .

In the case of cheese the indications of the consumption returns are as follows:—

	Lbs. per Head per annum.
Group I. (a.) .....	9
(b.) .....	11
„ II. ....	10
„ III. ....	$8\frac{1}{4}$
„ IV. ....	$10\frac{1}{2}$

The Board of Trade returns, however, show an average for agricultural labourers of  $10\frac{1}{2}$  lbs., and for urban workmen, 11·2 lbs. It appears, reasonable, therefore, to raise the average for the whole of Group I to 11 lbs., in which case the weighted average per head for the whole population would be  $10\frac{1}{2}$  lbs. of cheese annually, whereof 6·8 lbs. is imported.

<sup>5</sup> British and Foreign Trade and Industry Cd-1761.

The returns of butter consumption can hardly fail to have been complicated by the practical difficulty of excluding margarine. It was requested that margarine should be excluded from the returns made to the Committee, but it is doubtful whether this was done—or, in fact, whether it could be completely done—in the case of the working-class returns. The returns received work out for Group I (a) (labourers) at 21 lbs. per head, and for I (b) (artizans, &c.) at 24 lbs. per head. The imports of margarine amount to  $2\frac{1}{2}$  lbs. per head, and the quantity manufactured in this country is probably rather more than half as much. Assuming the total consumption of margarine to be 4 lbs. per head all round, and allowing for the fact that among the more well-to-do classes the amount consumed would be very small, it is evident that if the returns of “butter” from the working classes did in fact include margarine, a material reduction must be made from the average figures above given. That this surmise is reasonable is suggested by a comparison with the Board of Trade returns of butter consumption, which indicated an average of 9 lbs. per head for agricultural labourers and  $16\frac{1}{2}$  lbs. for urban workmen. There appears to be ground for the belief that in these returns margarine was more successfully eliminated owing to the fact that they were made, not by the consumers themselves, but by local investigators who furnished estimates, and who, no doubt, had especial regard to the limitations of the inquiry. Taking these two sets of returns as indications of working-class consumption of butter, it would appear that, after making a deduction for margarine, the head rate would fall somewhere within the limits of 14 to 18 lbs. If the previous calculations as to the consumption of milk and cheese, in regard to which there appears to be more certainty, are approximately correct, the available supply would not provide for a consumption of more than 15 lbs. of butter per head for the labouring classes, and adopting that figure for the whole of Group I the average consumption per head for each class would be indicated as follows:—

	Lbs. per Head per annum.
Group I. ....	15
„ II. ....	23
„ III. ....	29
„ IV. ....	41

The weighted average per head for the whole population would be  $18\frac{1}{2}$  lbs., of which 9·8 lbs. is imported.

Accepting these conclusions, it becomes possible to distribute the 1,723 million gallons arrived at as the estimated total production of available milk in the United Kingdom as follows:—

	Gallons.
Consumed as milk .....	620,000,000
"    " cheese .....	153,000,000
"    " butter .....	944,000,000
"    " condensed milk, &c. ....	6,000,000
	<hr/>
	1,723,000,000

As a guide to the conversion of the milk used for cheese and butter into the weights of those commodities, the replies received to the inquiry of this Committee on this point are valuable. They numbered 143, and gave averages of  $8\frac{1}{2}$  pints to 1 lb. of cheese and 21 pints to 1 lb. of butter, and the round figures of 8 and 21 pints may be adopted. In Ireland the records of 122 creameries show an average of 2.42 gallons (= 19.36 pints) per lb. of butter,<sup>6</sup> but, on the other hand, in the majority of farm dairies, where the separator is not used, the amount required would be greater.<sup>7</sup>

As to the production of condensed milk in the United Kingdom, no statistics are available. The importation amounts to about  $2\frac{1}{2}$  lbs. per head, but about 1 lb. per head is exported, so that the nett imports are  $1\frac{1}{2}$  lbs. per head. This would represent nearly half a gallon per head, but a considerable proportion is "machine-skimmed," and cannot, therefore, be counted as equal in value to whole milk.

No attempt is made to estimate the amount of separated or skim milk which comes, directly or indirectly, into human consumption, but the quantity is no doubt considerable.

The total supplies of dairy products, based on a five-years' average, and adopting the foregoing calculations, may be summarised as under:—

	Quantities (000's omitted).			Average per Head.		
	Home Produce.	Imports (less Exports).	Total.	Home Produce.	Imports (less Exports).	Total.
	Gallons.	Gallons.	Gallons.	Gallons.		Gallons.
Milk .....	620,000,	201,	620,201,	15	—	15
	Cwts.	Cwts.	Cwts.	Lbs.	Lbs.	Lbs.
Cheese .....	1,366,	2,520,	3,886,	3.7	6.8	10.5
Butter.....	3,211,	3,638,	6,849,	8.7	9.8	18.5

On behalf of the Committee,

June, 1904.

R. H. R. & W.

<sup>6</sup> "Report of Irish Agricultural Organisation Society, 1902."

<sup>7</sup> In the co-operative creameries of Denmark the average is 25 lbs. of milk to 1 lb. of butter.

## APPENDIX.

TABLE I.—Abstract of Replies to Questions 2 and 3 of Schedule A, showing the Number of Deaths during the Year.

(a.) CATTLE.

Reference Number to Schedule	Herd on 4th June.			Deaths during the ensuing Year.		Number of Calves Born, and Number which Died during the Year.	
	Total Herd.	Number under 1 Year.	Number 1 Year and above.	Number under 1 Year.	Number 1 Year and above.	Number Born.	Number which Died.
3	149	27	122	—	2	—	—
7	10	—	10	1	—	—	—
8A	188	22	166	2	1	77	—
9	981	148	833	12	5	—	—
10	274	—	274	—	3	210	5
11	81	2	79	—	3	—	—
13	164	53	111	1	2	15	—
15	67	5	62	—	—	—	—
16	375	15	360	2	10	—	—
17	58	—	58	2	1	—	—
21	295	—	295	—	—	—	—
22	353	70	283	10	6	—	—
23	40	8	32	—	1	20	—
26	93	16	77	—	2	—	—
28	90	12	78	1	2	53	4
30	120	16	104	6	1	78	10
31	—	—	—	—	—	58	11
32	52	7	45	—	1	30	1
33	70	14	56	2	2	—	—
35	68	10	58	2	2	—	—
36	26	8	18	—	2	12	—
38	91	15	76	1	2	19	—
39	67	15	52	—	1	14	—
40	—	—	—	—	—	12	—
47	39	—	39	—	1	42	—
49	53	—	53	1	3	—	—
50	36	5	31	—	—	—	—
51	85	22	63	1	1	16	—
52	21	—	21	5	3	4	—
54	120	20	100	5	3	—	—
56	139	20	119	2	5	71	5
62	65	—	65	—	3	77	3
63	28	—	28	2	2	20	6
64	40	8	32	1	—	—	—
65	75	20	55	—	2	36	—
66	166	42	124	—	2	—	—
68	56	11	45	2	—	—	—
70	147	34	113	2	5	32	2
71	136	37	99	2	—	39	2
72	29	15	14	2	—	10	1
73	39	6	33	—	1	—	—
76	166	14	152	—	—	15	—
77	100	—	100	—	—	—	—
78	47	13	34	2	1	9	2
82	1	—	1	—	—	—	—
83	42	4	38	—	—	—	—
84	119	31	88	3	2	11	1

TABLE I *Contd.*—Abstract of Replies showing the Number of Deaths.(a.) CATTLE—*Contd.*

Reference Number to Schedule	Herd on 4th June.			Deaths during the ensuing Year.		Number of Calves Born, and Number which Died during the Year.	
	Total Herd.	Number under 1 Year.	Number 1 Year and above.	Number under 1 Year.	Number 1 Year and above.	Number Born.	Number which Died.
87	90	—	90	—	1	—	—
88	264	36	228	—	2	—	—
91	40	13	27	—	—	10	—
94	165	10	155	—	4	—	—
95	60	—	60	—	1	—	—
101	107	28	79	1	1	26	—
102	74	14	60	4	2	38	2
104	53	22	31	—	1	22	—
105	15	—	15	—	1	—	—
106	96	20	76	—	3	—	—
108	7	—	7	—	—	4	1
110	68	13	55	1	—	8	1
111	108	24	84	3	—	33	3
113	241	17	224	—	1	40	3
114	28	—	28	—	1	—	—
115	76	21	55	—	5	29	—
117	50	4	46	—	—	20	3
118	13	1	12	—	—	—	—
119	56	6	50	2	—	—	—
121	33	—	33	—	2	—	—
122	205	60	145	—	—	45	3
124	180	25	155	1	1	29	—
126	62	14	48	2	2	26	2
127	24	—	24	—	1	2	—
129	36	5	31	—	2	—	—
133	92	18	74	3	5	50	14
134	141	20	121	3	1	—	—
136	74	—	74	—	1	5	—
138	—	—	—	—	—	140	7
140	96	—	96	—	1	—	—
141	61	18	43	—	—	—	—
142	33	10	23	4	—	—	—
144	108	13	95	9	3	73	5
145	—	—	—	—	—	50	10
148	70	—	70	—	2	—	—
150	105	20	85	—	1	—	—
151	49	11	38	3	—	12	1
153	92	—	92	—	—	2	—
154	85	14	71	9	6	32	12
155	95	8	87	4	4	—	—
156	28	—	28	—	2	31	2
157	23	—	23	—	1	—	—
160	50	—	50	—	4	—	—
161	164	—	164	—	5	—	—
162	35	7	28	3	—	9	2
163	95	15	80	2	2	50	2
164	14	—	14	—	1	—	—
168	44	14	30	1	1	19	1

TABLE I Contd.—Abstract of Replies showing the Number of Deaths.

## (a.) CATTLE—Contd.

Reference Number to Schedule	Herd on 4th June.			Deaths during the ensuing Year.		Number of Calves Born, and Number which Died during the Year.	
	Total Herd.	Number under 1 Year.	Number 1 Year and above.	Number under 1 Year.	Number 1 Year and above.	Number Born.	Number which Died.
169	21	—	21	—	2	—	—
170	203	22	181	2	3	92	2
171	114	24	90	—	—	30	—
172	115	30	85	1	—	—	—
173	68	20	48	2	—	10	2
175	65	18	47	2	—	31	1
178	64	7	57	2	—	30	3
179	94	23	71	1	2	39	1
180	76	15	61	—	—	—	—
181	316	17	299	4	16	—	—
182	55	16	39	3	—	33	3
184	69	14	55	1	—	—	—
187	53	—	53	—	—	—	—
188	64	10	54	2	1	6	2
191	26	—	26	—	—	—	—
192	79	6	73	1	2	—	—
195	23	—	23	—	1	—	—
196	178	30	148	8	4	—	—
197	—	—	—	—	—	18	2
198	77	22	55	1	1	27	5
199	57	6	51	2	1	—	—
200	71	23	48	2	2	23	2
201	60	—	60	—	—	17	—
202	47	10	37	5	—	—	—
203	37	4	33	—	—	4	—
204	52	10	42	—	—	—	—
205	27	3	24	—	1	6	—
206	85	22	63	2	2	22	3
207	65	11	54	—	—	12	—
208	19	6	13	1	1	10	—
209	—	—	—	—	—	4	—
210	135	35	100	8	3	—	—
211	101	29	72	—	—	—	—
213	139	35	104	2	1	44	—
214	64	4	60	—	1	—	—
215	22	—	22	—	—	—	—
216	59	2	57	—	1	3	—
217	60	16	44	1	2	22	—
218	96	24	72	—	4	50	3
219	—	—	—	—	—	15	2
220	97	16	81	—	—	42	5
221	20	2	18	—	—	10	—
224	72	19	53	1	—	17	1
224A	133	25	108	8	2	47	8
226	199	46	153	6	—	45	2
227	64	11	53	2	1	7	1
228	120	30	90	1	2	33	—
229	249	6	243	—	5	—	—



TABLE I *Contd.*—*Abstract of Replies showing the Number of Deaths.*(a.) CATTLE—*Contd.*

Reference Number to Schedule	Herd on 4th June.			Deaths during the ensuing Year.		Number of Calves Born, and Number which Died during the Year.	
	Total Herd.	Number under 1 Year.	Number 1 Year and above.	Number under 1 Year.	Number 1 Year and above.	Number Born.	Number which Died.
230	107	17	90	2	3	12	2
231	10	4	6	1	—	4	1
233	356	23	333	3	1	15	3
235	95	—	95	—	3	—	—
238	—	—	—	—	—	12	2
241	40	16	24	—	—	16	—
242	49	7	42	1	—	7	1
243	62	—	62	—	—	5	—
244	158	—	158	—	5	—	—
245	35	2	33	—	2	30	—
248	73	27	46	2	—	13	—
251	44	6	38	—	2	—	—
253	12	1	11	—	1	7	1
254	61	—	61	7	4	84	7
255	73	8	65	—	5	46	—
257	23	4	19	—	—	—	—
258	220	—	220	—	—	8	—
259	186	30	156	3	4	102	12
260	82	12	70	—	4	68	3
261 {	23	2	21	1	—	18	1
	109	26	83	—	3	77	4
262	111	23	88	—	—	15	1
264	170	30	140	—	3	80	6
265	102	14	88	—	—	72	—
266	10	5	5	—	—	5	—
267	25	6	19	1	—	5	—
268	83	20	63	9	10	24	9
270	136	24	112	5	—	50	5
271	14	3	11	—	—	3	—
272	76	15	61	3	2	20	5
273	68	22	46	6	2	—	—
275	40	2	38	—	1	18	—
276	33	10	23	5	—	16	5
277	43	10	33	1	2	—	—
278	53	9	44	1	1	38	1
279	35	—	35	—	1	—	—
282	1,100	100	1,000	25	100	—	—
284	40	16	24	1	—	19	1
285	25	10	15	1	1	11	1
286	34	13	21	2	—	18	2
	17,092	2,452	14,640	278	375	3,452	256

TABLE I *Contd.*—Abstract of Replies showing the Number of Deaths.

(b.) SHEEP.

Reference Number to Schedule	Flock on 4th June.			Deaths during the Year.		Number of Lambs Born, and Number which died during Year.	
	Total Flock.	Number under 1 Year.	Number over 1 Year.	Number under 1 Year.	Number over 1 Year.	Number Born.	Number which Died.
3	610	300	310	6	4	—	—
7	268	127	141	5	3	163	23
8	350	150	200	6	3	240	2
9	1,020	525	495	13	7	—	—
10	400	—	400	—	25	—	—
11	200	77	123	1	6	—	—
12	1,513	318	1,195	7	34	—	—
13	365	132	233	2	10	127	10
16	849	353	496	5	47	—	—
17	94	53	41	6	2	—	—
20	78	39	39	—	4	54	—
21	289	166	123	—	7	—	—
23	102	50	52	3	8	43	5
27	283	159	124	8	6	—	—
28	184	100	84	—	4	99	9
30	160	50	110	7	1	24	12
31	80	40	40	—	9	75	7
33	132	70	62	18	3	—	—
35	127	50	77	4	5	—	—
38	196	87	109	15	23	90	3
44	625	240	385	90	16	280	90
49	187	114	73	15	6	—	—
50	66	12	54	4	—	—	—
51	130	—	130	—	8	138	15
52	70	—	70	9	2	8	5
63	245	—	245	10	6	170	20
65	628	287	341	15	9	203	10
68	845	240	605	7	25	—	—
71	198	82	116	10	4	—	—
73	74	10	64	5	30	—	—
76	2,388	630	1,758	30	30	600	20
84	1,278	501	777	60	20	522	18
86	644	—	644	—	32	—	—
87	150	—	150	—	7	—	—
88	1,762	655	1,107	35	48	—	—
90	8,100	1,600	6,500	64	260	—	—
91	230	84	146	4	5	86	2
94	224	80	144	2	6	—	—
101	347	144	203	14	12	—	—
102	24	—	24	3	4	54	3
104	421	160	261	6	2	190	6
110	735	345	390	3	10	—	—
113	828	297	531	—	24	316	20
118	374	126	248	12	—	154	7
122	—	—	—	—	—	530	10
124	1,133	515	618	9	6	405	2
125	200	—	200	2	1	—	—
126	428	208	220	10	11	208	10

TABLE I *Contd.*—*Abstract of Replies showing the Number of Deaths.*(b.) SHEEP—*Contd.*

Reference Number to Schedule	Flock on 4th June.			Deaths during the Year.		Number of Lambs Born, and Number which Died during Year.	
	Total Flock.	Number under 1 Year.	Number over 1 Year.	Number under 1 Year.	Number over 1 Year.	Number Born.	Number which Died.
127	581	263	318	3	5	258	5
129	180	—	180	5	5	—	—
131	—	—	—	—	—	225	14
135	22	—	22	3	2	—	—
136	240	110	130	10	7	115	10
137	—	—	—	—	—	240	15
138	362	188	174	9	8	188	9
140	323	—	323	—	7	—	—
141	413	230	183	25	25	20	—
144	237	117	120	7	4	125	8
148	70	—	70	—	3	—	—
151	520	160	360	16	5	180	10
154	125	70	55	3	2	70	14
155	215	3	212	—	2	—	—
158	703	350	353	8	16	251	6
159	300	—	300	10	4	320	20
160	100	—	100	—	14	—	—
162	90	—	90	—	2	34	1
163	100	50	50	2	2	50	2
170	2,250	950	1,300	30	44	920	30
172	1,238	417	821	40	36	—	—
173	1,080	418	662	—	15	460	7
175	—	—	—	—	—	234	23
177	910	450	460	66	18	—	—
178	350	150	200	7	6	180	7
179	418	244	174	12	15	252	11
181	625	299	326	7	9	300	5
182	328	178	150	25	9	208	25
183	—	—	—	—	—	529	5
184	1,290	588	702	50	23	570	45
188	120	60	60	10	—	60	6
192	103	60	43	2	2	68	2
197	—	—	—	—	—	685	12
198	415	175	240	3	2	178	12
199	417	141	276	30	16	—	—
200	2,142	642	1,500	30	10	950	30
202	765	440	325	30	15	—	—
203	127	78	49	2	5	72	5
205	210	—	210	—	10	171	14
209	480	—	480	25	17	340	35
210	215	95	120	6	8	—	—
211	491	258	233	5	3	—	—
213	3,047	1,460	1,587	37	11	1,033	26
215	661	398	263	35	15	398	35
216	1,050	639	411	51	24	601	—
217	204	—	204	—	7	—	—
218	—	—	—	—	—	110	2
220	3,264	1,360	1,904	10	60	—	—

TABLE I *Contd.*—Abstract of Replies showing the Number of Deaths.(b.) SHEEP—*Contd.*

Reference Number to Schedule	Flock on 4th June.			Deaths during the Year.		Number of Lambs Born, and Number which Died during Year.	
	Total Flock.	Number under 1 Year.	Number over 1 Year.	Number under 1 Year.	Number over 1 Year.	Number Born.	Number which Died.
221	360	80	280	10	5	290	20
224	678	370	308	8	9	354	4
224A	1,283	530	753	23	26	641	39
226	717	307	410	15	20	320	13
227	59	1	58	—	1	2	—
228	216	—	216	8	2	—	—
230	830	415	415	30	20	—	—
233	828	490	338	6	10	501	6
240	735	235	500	30	36	—	—
241	7,940	2,282	5,658	115	178	2,242	64
242	1,048	500	548	35	17	540	35
243	223	85	138	17	—	57	1
244	125	—	125	—	14	—	—
246	568	247	321	12	6	—	—
248	2,890	1,105	1,785	81	81	1,000	81
250	968	33	935	9	38	255	6
251	1,680	400	1,280	20	25	—	—
253	571	—	571	—	19	578	15
254	5,970	1,320	4,650	127	125	4,830	265
255	2,140	1,051	1,089	23	34	1,128	89
258	1,050	480	570	18	30	500	10
259	200	—	200	20	25	120	20
262	1,234	378	856	10	30	370	10
264	50	—	50	—	4	—	—
267	20	20	—	1	—	38	1
268	30	—	30	—	4	—	—
270	125	66	59	15	5	82	12
271	6	—	6	—	—	7	—
272	38	24	14	4	1	34	4
273	150	70	80	13	3	—	—
275	29	—	29	—	8	—	—
277	19	10	9	1	1	—	—
278	77	45	32	3	2	49	7
279	96	—	96	2	3	—	—
285	14	8	6	—	1	9	—
	89,382	30,769	58,613	1,795	2,071	29,121	1,461

TABLE II.—*Abstract of the Replies to Question 3 of Schedule A, showing the Number of Calves, Lambs, and Pigs Born during the Year.*

Reference No. to Schedule.	No. of Cows on 4th June.	No. of Calves Born during the Year.	No. of Ewes on 4th June.	No. of Lambs Born during the Year.	No. of Sows on 4th June.	No. of Pigs Born during the Year.	Reference No. to Schedule.	No. of Cows on 4th June.	No. of Calves Born during the Year.	No. of Ewes on 4th June.	No. of Lambs Born during the Year.	No. of Sows on 4th June.	No. of Pigs Born during the Year.
7	—	—	141	163	—	—	118	11	8	123	154	—	—
8	126	60	234	240	16	167	122	55	45	500	530	—	—
10	224	210	—	—	—	—	124	37	29	310	405	7	75
11	42	32	—	—	12	163	126	26	26	168	208	2	20
12	—	—	405	354	5	53	127	2	2	201	258	4	29
13	30	15	120	127	—	—	129	—	—	100	120	5	30
15	—	—	—	—	3	32	131	5	5	183	225	—	—
16	—	—	331	497	—	—	133	55	50	—	—	—	—
18	—	—	—	—	1	5	136	4	5	75	115	—	—
20	37	30	39	54	—	—	138	142	140	147	188	7	100
23	20	20	43	43	—	—	144	83	73	120	125	—	—
28	64	53	54	99	—	—	148	—	—	60	80	3	40
30	87	78	40	24	—	—	151	13	12	160	180	2	18
31	—	—	51	75	—	—	154	50	32	60	70	—	—
32	33	30	—	—	1	20	156	28	31	—	—	—	—
36	18	12	—	—	—	—	153	—	—	233	251	—	—
38	51	19	80	90	—	—	159	—	—	250	320	—	—
39	13	14	—	—	—	—	162	9	9	34	34	2	12
40	14	12	31	40	11	50	163	50	50	60	50	2	20
43	110	120	600	600	—	—	164	14	10	—	—	—	—
44	2	2	280	280	—	—	168	25	19	—	—	3	47
47	38	42	—	—	—	—	169	—	—	—	—	4	45
51	15	16	135	138	—	—	170	141	92	1,023	920	—	—
52	—	—	—	—	2	18	171	46	30	—	—	—	—
54	75	60	—	—	—	—	173	8	10	460	460	—	—
56	74	71	—	—	—	—	175	33	31	214	234	2	11
58	70	60	400	440	2	12	177	—	—	—	—	8	50
62	65	77	—	—	—	—	178	40	30	120	180	—	—
63	20	20	150	170	—	—	179	35	39	129	252	—	—
65	31	36	204	203	28	330	181	—	—	332	300	—	—
70	57	32	148	88	2	5	182	33	33	175	203	—	—
71	57	39	—	—	—	—	184	—	—	481	570	—	—
72	14	10	—	—	2	16	187	—	—	112	92	—	—
76	33	15	523	600	5	20	188	6	6	—	—	—	—
78	15	9	—	—	—	—	191	—	—	65	80	—	—
83	—	—	—	—	9	120	192	65	34	40	68	—	—
84	12	11	448	522	9	120	197	20	18	730	685	1	9
88	90	57	753	771	31	377	198	26	27	156	178	2	20
91	17	10	99	86	5	20	200	23	23	770	950	—	—
94	120	56	62	30	—	—	201	16	17	—	—	—	—
101	26	26	180	175	1	—	203	8	4	67	72	—	—
102	39	38	37	54	4	24	204	12	11	—	—	—	—
104	22	22	147	190	3	7	205	8	6	151	171	—	—
106	58	50	—	—	—	—	206	23	22	—	—	—	—
108	7	4	—	—	—	—	207	12	12	12	12	2	32
110	8	8	—	—	—	—	208	10	10	—	—	—	—
111	40	33	—	—	—	—	209	7	4	400	340	—	—
113	54	40	221	316	2	16	213	32	44	1,029	1,033	—	—
115	40	29	90	137	—	—	216	4	3	386	601	—	—
116	30	30	85	120	2	55	217	22	22	203	230	—	—
117	26	20	—	—	—	—	218	50	50	67	110	—	—

TABLE II *Contd.*—Abstract showing the Number of Calves, Lambs, and Pigs Born.

Reference No. to Schedule.	No. of Cows on 4th June.	No. of Calves Born during the Year.	No. of Ewes on 4th June.	No. of Lambs Born during the Year.	No. of Sows on 4th June.	No. of Pigs Born during the Year.	Reference No. to Schedule.	No. of Cows on 4th June.	No. of Calves Born during the Year.	No. of Ewes on 4th June.	No. of Lambs Born during the Year.	No. of Sows on 4th June.	No. of Pigs Born during the Year.
220	46	42	1,520	1,360	—	—	260	68	68	—	—	2	30
221	10	10	300	290	—	—	261	76	77	—	—	3	19
223	23	35	—	—	—	—	262	18	18	—	—	—	—
224	16	17	204	354	—	—	263	19	15	350	370	—	—
224A	61	47	531	641	2	10	264	80	80	—	—	—	—
226	34	45	220	320	4	31	265	72	72	—	—	—	—
227	13	7	1	2	3	16	266	5	5	—	—	—	—
228	25	33	—	—	—	—	267	10	5	31	38	—	—
230	17	12	400	370	3	30	268	23	24	—	—	1	8
231	4	4	—	—	—	—	270	58	50	—	—	—	—
238	15	15	330	501	—	—	271	3	3	7	7	—	—
238	10	12	—	—	—	—	272	36	20	16	34	—	—
240	5	5	—	—	—	—	273	26	28	50	80	—	—
241	17	16	2,507	2,242	—	—	275	22	18	—	—	5	59
242	4	7	490	540	—	—	276	17	16	—	—	2	25
243	4	5	33	57	—	—	277	10	10	10	14	—	—
245	30	30	—	—	—	—	278	35	38	29	49	—	—
246	36	18	—	—	—	—	279	—	—	70	103	—	—
248	27	13	1,290	1,000	—	—	280	9	8	25	30	—	—
253	7	7	450	578	2	21	284	16	19	—	—	—	—
254	61	84	4,530	4,830	—	—	285	10	11	5	9	—	—
255	62	46	826	1,128	—	—	286	18	18	—	—	—	—
258	8	8	530	500	—	—							
259	100	102	100	120	—	—	Total	4,584	3,975	30,847	33,382	240	2,437

TABLE III.—Summary of Replies received to Schedule B, showing the Estimated Average Age and Weight of Cattle when Slaughtered.

(a.) BULLOCKS, HEIFERS, OXEN, OR STEERS.

Number of Schedule.	County.	Number on which Estimate was Based.	Age.	Fasted Live Weight.	Weight of Dressed Carcass.
	ENGLAND.		Years.	lbs.	lbs.
1	London .....	624	2½	1,120	640
2	" .....	52	3	1,400	875
3*	" .....	5,200	2½	—	752
5	" .....	750	2	—	720
7	Chester .....	312	3	1,288	752
8	" .....	150	3	1,250	700
9	" .....	525	3	1,003	580
10	Cornwall .....	208	2—4	—	560
11	Cumberland .....	700	3	—	560
12	Devonshire .....	1,421	3	—	718

\* This return relates to foreign animals landed at Deptford, and is not included in the general average.

TABLE III *Contd.*—*Estimated Average Age and Weight of Cattle.*a.) **BULLOCKS, HEIFERS, OXEN, OR STEERS—Contd.**

Number of Schedule.	County.	Number on which Estimate was Based.	Age.	Fasted Live Weight.	Weight of Dressed Carcase.
			Years.		lbs.
13	Derbyshire .....	1,500	—	—	560
14	" .....	—	3½	—	700
15	Durham .....	810	2—3	—	692
16	" .....	2,120	3½	—	599
17	" .....	1,044	3	1,064	630
18	" .....	1,700	2½	1,232	700
19	" .....	325	3	—	658
20	" .....	789	2½	—	616
21	" .....	620	3	1,120	644
22	Essex .....	379	2½	1,188	679
23	" .....	156	3	1,260	720
24	Hants .....	257	2½	—	664
25	Kent .....	150	3—4	1,176	696
26	Lancashire .....	260	—	—	566
27	" .....	1,060	2	1,120	620
28	" .....	260	2	—	480
29	" .....	1,000	2—4	—	500
30	" .....	330	2	980	560
31	" .....	170	3	1,008	598
33	" .....	723	3	—	600
34	" .....	362	2	—	560
35	" .....	500	2—4	—	640
40	" .....	550	4	1,200	640
41	" .....	1,705	2—3	—	600
42	" .....	1,040	3	—	600
43	" .....	600	2½	950	530
46	Lincoln .....	512	2½	1,190	840
48	Northumberland .....	2,100	2½	1,092	644
49	" .....	550	2—3	—	672
50	" .....	1,400	3½	1,078	560
51	Shropshire .....	18,513	2—3	1,232	680
52	Staffordshire .....	156	2½	1,120	640
53	Warwickshire .....	140	3	—	700
54	Worcester .....	940	2	—	700
55	Yorkshire .....	500	2—3	1,148	720
56	" .....	7,000	2	1,120	630
57	" .....	332	3	—	670
58	" .....	850	2—4	—	756
60	" .....	700	3—5	—	742
59	" .....	1,000	3	1,120	644
61	" .....	2,830	—	—	700
62	" .....	725	2½	1,288	644
64	" .....	1,170	2—3	—	700
65	" .....	820	3	1,484	854
66	" .....	5,300	2—3½	1,232	735
<b>WALES.</b>					
82	Anglesey .....	—	3	—	720
83	Carmarvon .....	100	3	—	640
84	" .....	35	2½	1,232	756
86	" .....	70	3	1,120	680
88	" .....	780	2½	—	670
90	Flint .....	120	2½	—	720

TABLE III *Contd.*—*Estimated Average Age and Weight of Cattle.*(a.) **BULLOCKS, HEIFERS, OXEN, OR STEERS—Contd.**

Number of Schedule.	County.	Number on which Estimate was Based.	Age.	Fasted Live Weight.	Weight of Dressed Carcase.
	SCOTLAND.		Years.	lbs.	lbs.
67	Aberdeen .....	1,240	2	1,064	672
68	Argyll .....	295	2—3	—	504
69	Banff .....	400	2½	—	672
70	Clackmannan .....	520	2—3½	1,400	840
71	Dumbarton .....	364	4	1,120	672
72	Fife .....	1,177	3	—	826
73	Lanark .....	1,022	—	—	672
74	" .....	300	3—5	1,232	672
75	Midlothian .....	572	2—3	1,232	693
76	" .....	3,185	3	1,232	734
78	" .....	780	2½	1,288	728
79	Perth .....	1,000	2½	1,232	728
80	Stirling .....	500	3	—	672
81	Wigtown .....	165	2	—	616
	Mean of 74 returns	—	—	—	666

(b.) **DRAFT COWS.**

	ENGLAND.				
8	Chester .....	—	7	1,250	650
9	" .....	—	4	1,148	600
47	Notts .....	107	5	—	719
51	Shropshire .....	—	5—6	1,064	580
55	Yorkshire .....	—	4—5	1,100	689
56	" .....	1,000	5	1,260	630
	WALES.				
83	Carnarvon .....	—	(young)	—	535
	SCOTLAND.				
68	Argyll .....	21	5	—	420
	Mean of 8 returns	—	—	—	603

(c.) **BULLS.**

	ENGLAND.				
2	London .....	—	—	2,100	1,312
51	Shropshire .....	—	4	1,344	720
55	Yorkshire .....	—	2—3½	1,671	1,024
56	" .....	500	3	1,470	812
	WALES.				
88	Carnarvon .....	—	3	—	960
	SCOTLAND.				
68	Argyll .....	7	3	—	418
71	Dumbarton .....	—	3	1,288	896
79	Perth .....	40	2—3	1,568	952
	Mean of 8 returns	—	—	—	890



TABLE III *Contd.*—*Estimated Average Age and Weight of Cattle.*  
(d.) CALVES.

Number of Schedule.	County.	Number on which Estimate was Based.	Age.	Fasted Live Weight.	Weight of Dressed Carcass.
	ENGLAND.		Mths. Wks.	lbs.	lbs.
1	London .....	—	— 12	216	144
2	" .....	—	—	224	140
4	" .....	50	3—4	—	144
5	" .....	—	—	—	128
7	Chester .....	—	2 —	—	120
8	" .....	—	— —	240	130
9	" .....	—	5—8	—	84
14	Derby .....	—	2 —	—	110
16	Durham .....	29	2 —	—	97
17	" .....	24	2½ —	131	98
20	" .....	—	5 —	—	103
21	" .....	—	2 —	—	98
24	Hants .....	103	2½ —	—	136
25	Kent .....	—	— 8	238	152
30	Lancashire .....	—	— 6	125	80
31	" .....	—	6—8	170	102
32	" .....	—	3 —	112	80
33	" .....	24	—	—	112
34	" .....	—	1½ —	—	90
35	" .....	—	3—4	—	120
36	" .....	—	2 —	110	90
37	" .....	—	— 5	100	72
38	" .....	—	3—6	—	100
40	" .....	—	1½ —	200	120
41	" .....	—	—	—	115
43	" .....	—	— 5	148	88
44	Leicester .....	—	2½ —	—	140
46	Lincoln .....	—	3 —	129	84
49	Northumberland .....	—	3 —	—	112
50	" .....	—	6 —	210	126
51	Shropshire .....	—	— 5	—	100
52	Staffordshire .....	—	1½ —	168	100
53	Warwickshire .....	—	— 6	—	120
54	Worcester .....	—	2 —	—	110
55	Yorkshire .....	—	3—4	118	76
56	" .....	1,500	— 6	140	98
57	" .....	25	— 7	—	158
58	" .....	—	— 6—8	—	105
59	" .....	—	—	—	80
62	" .....	—	—	—	70
63	" .....	44	1 —	55	40
65	" .....	—	2 —	—	112
66	" .....	—	— 6	—	90
	WALES.				
82	Anglesey .....	—	2 —	—	80
83	Carnarvon .....	—	—	—	80
84	" .....	—	— 6	120	75
86	" .....	—	— 6	—	100
88	" .....	—	— 5	—	90
90	Flint .....	—	1 —	—	90
	SCOTLAND.				
88	Argyll .....	—	—	—	52
71	Dumbarton .....	—	—	—	50
	Mean of 51 returns	—	—	—	—

TABLE IV.—*Summary of Replies received to Schedule B, showing Estimated Average Age and Weight of Sheep and Lambs when Slaughtered.*

(a.) WETHERS.

Number of Schedule.	County.	Number on which Estimate was Based.	Age.	Fasted Live Weight.	Weight of Dressed Carcass.
	ENGLAND.		Yrs. Mths.	lbs.	lbs.
1	London .....	10,400	1 3	96	56
2	" .....	750	—	210	120
4	" .....	4,000	1 6	—	72
5	" .....	3,600	1 6	—	64
6	Cambridgeshire ....	830	1—2 yrs.	130	72
7	Chester .....	1,300	3 —	120	70
8	" .....	1,200	3 —	125	66
9	" .....	1,200	1—2 yrs.	—	54
10	Cornwall .....	208	2 —	—	70
11	Cumberland .....	2,000	2 —	—	55
13	Derbyshire .....	3,000	—	—	83
14	" .....	1,000	1 2	—	79
17	Durham .....	1,885	1 3	101½	70
18	" .....	2,800	1 2	140	78
21	" .....	730	1—2 yrs.	—	70
22	Essex .....	562	1 6	—	74
23	" .....	364	1 3	126	72
26	Lancashire.....	832	—	—	44
28	" .....	1,560	1 —	—	60
29	" .....	2,500	2—4 yrs.	—	50
31	" .....	800	1—2 yrs.	100	60
33	" .....	1,000	2 —	—	60
34	" .....	1,850	1 —	—	60
35	" .....	2,500	1—2 yrs.	—	64
36	" .....	5,670	2 —	75	50
38	" .....	300	2 —	—	65
39	" .....	780	1 —	—	54
40	" .....	250	2 6	110	72
41	" .....	3,177	—	—	60
42	" .....	5,200	2 —	—	56
43	" .....	4,000	2 —	100	50
44	Leicestershire .....	1,770	1 6	—	74
46	Lincolnshire .....	1,815	1 3	126	84
48	Northumberland ....	12,000	1 6	—	65
49	" .....	2,000	1—2 yrs.	—	65
50	" .....	2,000	1 —	98	63
51	Shropshire.....	62,405	1 —	130	70
52	Staffordshire.....	488	1 8	140	75
58	Warwickshire .....	650	1 —	—	73
54	Worcestershire.....	240	1 —	—	76
55	Yorkshire .....	5,000	1 6	103	64
56	" .....	40,000	1 —	126	72
57	" .....	662	—	—	74
58	" .....	2,000	1 —	—	80
59	" .....	3,600	—	—	64
61	" .....	5,798	—	—	70
62	" .....	2,493	1 —	—	66
64	" .....	2,355	2 —	—	70
65	" .....	1,796	1 —	—	70
66	" .....	13,500	1 —	119	69

TABLE IV *Contd.*—*Estimated Average Age and Weight of Sheep and Lambs.*  
(a.) **WETHERS—Contd.**

Number of Schedule.	County.	Number on which Estimate was Based.	Age.	Fasted Live Weight.	Weight of Dressed Carcass.
	<b>WALES.</b>		<b>Yrs. Mnth.</b>	<b>lbs.</b>	<b>lbs.</b>
82	Anglesey .....	—	1 —	140	72
83	Carnarvon .....	900	—	—	55
84	" .....	700	4 —	85	41
85	" .....	260	4 —	85	42
86	" .....	1,600	2 6	80	40
88	" .....	4,160	1 4	—	60
89	" .....	—	1 6	—	40
90	Flint .....	3,000	3 —	100	50
	<b>SCOTLAND.</b>				
67	Aberdeen .....	2,255	2 —	112	56
68	Argyll .....	576	3 —	—	58
69	Banff .....	300	1 3	—	60
70	Clackmannan .....	1,040	1—1½ yrs.	—	62
71	Dumbarton .....	1,000	3 —	—	56
72	Fife .....	1,286	—	—	85
73	Lanark .....	2,611	—	—	60
75	Midlothian .....	936	—	—	60
76	" .....	9,638	2 —	—	60
78	" .....	2,080	2 —	—	60
81	Wigtown .....	500	1 —	—	45
	Mean of 69 returns	—	—	—	64

(b.) **EWES.**

	<b>ENGLAND.</b>		<b>Years.</b>	<b>lbs.</b>	<b>lbs.</b>
7	Chester .....	—	4	150	78
8	" .....	—	6	106	56
9	" .....	—	2	—	60
10	Cornwall .....	—	2	—	70
14	Derbyshire.....	—	—	—	80
31	Lancashire.....	—	1—2	100	60
34	" .....	—	3	—	54
39	" .....	104	2—3	—	54
51	Shropshire .....	—	4	120	60
55	Yorkshire .....	—	2—3	134	80
56	" .....	10,000	4	140	80
	<b>WALES.</b>				
83	Carnarvon .....	—	—	—	36
84	" .....	—	3—4	70	32
85	" .....	—	4	85	42
86	" .....	—	6	75	35
88	" .....	—	2—3	—	70
89	" .....	—	4	—	36
90	Flint .....	—	2	80	40
	<b>SCOTLAND.</b>				
68	Argyll .....	—	4	—	54
71	Dumbarton .....	—	3	—	50
76	Midlothian .....	—	3	—	60
	Mean of 22 returns	—	—	—	57

TABLE IV Contd.—Estimated Average Age and Weight of Sheep and Lambs.

## (c.) LAMBS.

Number of Schedule.	County.	Number on which Estimate was Based.	Age.	Fasted Live Weight.	Weight of Dressed Carcass.
	ENGLAND.				
1	London .....	—	Mths. Wks. — 2½	lbs. 48	lbs. 32
4	" .....	—	4 —	—	40
5	" .....	—	5 —	—	40
6	Cambridgeshire.....	—	3—6 —	50	32
7	Chester .....	—	6 —	70	38
8	" .....	—	6 —	90	45
9	" .....	—	3—5 —	—	40
10	Cornwall .....	—	5 —	—	40
11	Cumberland .....	—	6 —	—	42
13	Derbyshire.....	260	—	—	40
14	" .....	—	—	—	40
15	Durham .....	300	—	—	42
17	" .....	481	6 —	67	42
18	" .....	—	4 —	86	46
21	" .....	—	3—4 —	—	42
23	Essex .....	12	2 —	56	32
24	Hants .....	244	3 —	—	44
25	Lancashire.....	—	—	—	38
29	" .....	1,500	—	—	40
31	" .....	—	6—9 —	80	48
33	" .....	1,423	—	—	40
34	" .....	—	6 —	—	48
35	" .....	—	3—6 —	—	48
36	" .....	—	6 —	60	40
37	" .....	600	3½ —	70	44
38	" .....	—	—	—	44
39	" .....	780	3—10 —	—	46
41	" .....	2,163	—	—	42
42	" .....	—	5 —	—	36
43	" .....	—	— 20	80	40
44	Leicestershire .....	—	3 —	70	38
49	Northumberland ...	—	3—6 —	—	44
50	" .....	—	4 —	70	42
51	Shropshire .....	—	3 —	65	40
52	Staffordshire.....	—	7 —	70	38
53	Warwick .....	—	3 —	—	44
54	Worcestershire.....	—	6 —	—	40
55	Yorkshire .....	—	3—4 —	63	38
56	" .....	15,000	4 —	84	48
57	" .....	29	—	—	47
58	" .....	—	3—4 —	—	50
59	" .....	—	—	—	44
62	" .....	103	—	—	44
64	" .....	—	6 —	—	42
65	" .....	—	4 —	—	42
66	" .....	—	—	—	44

TABLE IV *Contd.*—*Estimated Average Age and Weight of Sheep and Lambs.*(c.) LAMBS—*Contd.*

Number of Schedule.	County.	Number on which Estimate was Based.	Age.	Fasted Live Weight.	Weight of Dressed Carcass.
	WALES.		Mths. Wks.	lbs.	lbs.
82	Anglesey .....	—	3 —	—	40
83	Carnarvon .....	—	—	—	38
84	" .....	—	5—7 —	68	35
85	" .....	—	6 —	60	30
86	" .....	—	4 —	70	36
88	" .....	—	3 —	—	36
90	Flint .....	—	5 —	80	40
	SCOTLAND.				
68	Argyll .....	—	6-10 —	—	32
69	Banff .....	—	4 —	—	50
71	Dumbarton .....	—	6 —	—	38
81	Wigtown .....	—	—	—	40
	Mean of 63 returns	—	—	—	41

TABLE V.—*Summary of Replies received to Schedule B, showing Estimated Average Age and Weight of Pigs when Slaughtered.*

## (a.) BACON PIGS.

Number of Schedule.	County.	Number on which Estimate was Based.*	Age.	Fasted Live Weight.	Weight of Dressed Carcass.
	ENGLAND.		Months.	lbs.	lbs.
1	London .....	1,064	10	380	320
2	" .....	950	—	280	220
7	Chester .....	90	12	230	180
8	" .....	300	10	250	200
14	Derbyshire .....	1,000	—	—	266
17	Durham .....	46	15	364	280
21	" .....	420	12	—	336
22	Essex .....	750	9	—	130
25	Kent .....	500	9	—	140

\* In the large majority of instances these numbers include porkers as well as bacon pigs, no separate figures being given.

TABLE V *Contd.*—Estimated Average Age and Weight of Pigs.(a) BACON PIGS—*Contd.*

Number of Schedule.	County.	Number on which Estimate was Based.*	Age.	Fasted Live Weight.	Weight of Dressed Carcass.
	ENGLAND.		Months.	lbs.	lbs.
28	Lancashire.....	208	9	—	160
31	".....	80	8	—	200
32	".....	650	12	240	210
33	".....	464	12	—	200
34	".....	100	11	—	240
35	".....	520	—	—	300
37	".....	500	11	200	160
38	".....	1,300	8	—	180
39	".....	38	8	—	110
40	".....	150	9	250	220
41	".....	1,709	—	—	180
42	".....	1,040	12	—	180
43	".....	400	8	290	220
46	Lincoln.....	953	9	341	280
50	Northumberland....	400	18	336	266
51	Shropshire.....	31,000	10	250	200
55	Yorkshire.....	500	18	321	288
56	".....	2,000	24	280	231
58	".....	2,000	12	—	238
59	".....	600	—	—	196
61	".....	4,680	—	—	224
62	".....	1,181	—	—	280
64	".....	798	12	—	252
65	".....	684	12	—	350
66	".....	2,800	12	238	196
	WALES.				
85	Carnarvon.....	1,500	9	200	150
87	".....	860	10	210	150
90	Flint.....	150	9	—	200
	SCOTLAND.				
72	Fife.....	20	9	—	140
73	Lanark.....	181	—	—	112
75	Midlothian.....	104	—	—	140
76	".....	669	—	—	220
	Mean of 41 returns	—	—	—	213

\* In the large majority of instances these numbers include porkers as well as bacon pigs, no separate figures being given.

• TABLE V Contd.—*Estimated Average Age and Weight of Pigs.*

## (b.) PORKERS.

Number of Schedule.	County.	Number on which Estimate was Based.	Age.	Fasted Live Weight.	Weight of Dressed Carcass.
	ENGLAND.		Months.	lbs.	lbs.
1	London .....	—	5	76	64
2	" .....	—	—	98	77
6	Cambridgeshire .....	—	6	130	100
8	Chester .....	—	4	160	80
10	Cornwall .....	60	—	—	120
11	Cumberland .....	50	10	—	140
14	Derbyshire .....	—	—	—	98
16	Durham .....	653	5	—	112
17	" .....	592	5	112	88
18	" .....	—	5	168	98
20	" .....	619	7	—	116
21	" .....	—	4½	—	98
23	Essex .....	800	6	203	147
24	Hants .....	372	6	—	154
25	Kent .....	500	4	—	70
31	Lancashire .....	—	3	—	70
34	" .....	—	6	—	120
35	" .....	—	—	—	59
38	" .....	—	5	—	120
39	" .....	20	4	—	60
42	" .....	—	6	—	100
43	" .....	—	6	185	140
46	Lincoln .....	—	6	245	196
48	Northumberland .....	1,000	—	—	80
49	" .....	300	12	—	98
50	" .....	—	9	140	98
51	Shropshire .....	—	4	96	80
52	Staffordshire .....	72	6	125	100
54	Worcestershire .....	70	3	—	70
55	Yorkshire .....	—	6	76	61
56	" .....	4,000	9	140	112
59	" .....	—	—	—	77
62	" .....	—	—	—	140
64	" .....	—	6	—	112
65	" .....	—	5	—	98
66	" .....	—	4½	126	98
	WALES.				
90	Flint .....	—	5	—	70
	SCOTLAND.				
67	Aberdeen .....	—	5	—	91
68	Argyll .....	53	2½	—	112
70	Clackmannan .....	90	7½	—	200
71	Dumbarton .....	230	8	—	140
76	Midlothian .....	—	—	—	106
78	" .....	208	6	—	120
	Mean of 43 returns	—	—	—	104

TABLE VI.—*Number of Cows and Heifers, other Cattle, Sheep and Pigs as returned in the United Kingdom in each of the Years 1868 to 1903, with the Proportion per 1,000 of Population.*

Years.	Cows and Heifers in Milk or in Calf.		Other Cattle.		Sheep.		Pigs.	
	Number. [000's omitted.]	Per 1,000 of Popu- lation.	Number. [000's omitted.]	Per 1,000 of Popu- lation.	Number. [000's omitted.]	Per 1,000 of Popu- lation.	Number. [000's omitted.]	Per 1,000 of Popu- lation.
		No.		No.		No.		No.
1868....	3,625,	118	5,458,	178	35,608,	1,160	3,189,	104
'69....	3,656,	118	5,422,	175	34,250,	1,106	3,028,	98
1870....	3,706,	118	5,529,	177	32,787,	1,049	3,651,	117
'71....	3,654,	116	5,692,	180	31,403,	995	4,137,	131
'72....	3,732,	117	5,987,	188	32,247,	1,012	4,178,	131
'73....	3,764,	117	6,390,	199	33,982,	1,056	3,564,	111
'74....	3,780,	116	6,501,	200	34,838,	1,072	3,537,	109
'75....	3,799,	115	6,364,	194	33,492,	1,020	3,495,	106
'76....	3,775,	114	6,220,	187	32,263,	972	3,734,	112
'77....	3,745,	112	5,987,	178	32,220,	960	3,984,	119
'78....	3,709,	109	6,052,	179	32,571,	960	3,768,	111
'79....	3,736,	109	6,226,	181	32,238,	940	3,178,	93
1880....	3,655,	105	6,216,	180	30,240,	873	2,863,	83
'81....	3,677,	105	6,228,	179	27,896,	799	3,149,	90
'82....	3,682,	104	6,150,	175	27,448,	780	3,956,	112
'83....	3,725,	105	6,373,	180	28,348,	800	3,986,	112
'84....	3,765,	106	6,658,	186	29,377,	822	3,906,	109
'85....	3,966,	110	6,903,	192	30,086,	835	3,687,	103
'86....	3,974,	109	6,899,	190	28,955,	797	3,497,	96
'87....	3,946,	108	6,694,	183	29,402,	803	3,721,	102
'88....	3,853,	104	6,416,	174	28,939,	785	3,816,	103
'89....	3,815,	102	6,458,	174	29,485,	793	3,906,	105
1890....	3,956,	106	6,834,	182	31,667,	845	4,362,	116
'91....	4,118,	109	7,226,	191	33,534,	887	4,273,	113
'92....	4,120,	108	7,399,	194	33,643,	882	3,266,	86
'93....	4,014,	104	7,194,	187	31,775,	825	3,278,	85
'94....	3,925,	101	6,856,	176	30,038,	772	3,794,	93
'95....	3,938,	100	6,815,	174	29,775,	758	4,239,	106
'96....	3,959,	100	6,983,	176	30,854,	778	4,301,	108
'97....	3,984,	100	7,020,	175	30,567,	764	3,683,	92
'98....	4,036,	100	7,113,	176	31,102,	769	3,719,	92
'99....	4,133,	101	7,212,	177	31,681,	777	4,004,	98
1900....	4,097,	99	7,358,	179	31,055,	754	3,664,	89
'01....	4,102,	99	7,376,	177	30,830,	742	3,411,	82
'02....	4,084,	97	7,293,	174	30,057,	716	3,640,	87
'03....	4,100,	97	7,308,	172	29,659,	700	4,086,	96



OBSERVATIONS *on the* PRODUCTION *and* CONSUMPTION of MEAT  
*and* DAIRY PRODUCTS.

*By* R. H. REW.

[Read before the Royal Statistical Society, 21st June, 1904.]

MAJOR PATRICK GEORGE CRAIGIE, C.B., President, in the Chair.]

THE Reports which I have presented to the Society on behalf of the Special Committee on Meat and Milk Production having been restricted to a more or less bald statement of the results of their enquiries, and the conclusions which they have drawn from them, I propose, by way of a personal Appendix to the Reports, to add a few general observations on the subject of the enquiry.

It is hardly necessary to say that although the Committee as a whole accepts the responsibility for the Reports, individual members are not necessarily committed to every statement contained therein, and still less to the precise phraseology employed. The statistical material at the disposal of the Committee was more scanty than was to be desired, but it has been carefully considered and weighed, and on the whole it may be fairly claimed that the conclusions arrived at are justified by the available evidence. I may be allowed to add that several members of the Committee were able to supplement the material before them by a considerable amount of personal knowledge of the subjects remitted to them.

The general result of the enquiry suggests that the following quantities represent, on an average of the five years ending June, 1903, the estimated annual production of Meat and Dairy Products in the United Kingdom :—

	Tons.
Beef and veal .....	662,520
Mutton and lamb .....	313,822
Bacon and pork .....	269,578
Total meat .....	1,245,920
Cheese .....	68,300
Butter .....	160,550
	Gallons.
Milk (for consumption as such) .....	620,000,000

The estimated average consumption per head of these commodities, including imported supplies, is as follows :—

	Home Produced.	Imported.	Total.
	lbs.	lbs.	lbs.
Beef and veal.....	35·9	20·9	56·8
Mutton and lamb .....	17·0	10·5	27·5
Bacon and pork .....	14·6	22·2	36·8
Total meat .....	67·5	54·3*	121·8*
	Gallons.	Gallons.	Gallons.
Milk .....	15·0	—	15·0
	lbs.	lbs.	lbs.
Cheese .....	3·7	6·8	10·5
Butter .....	8·7	9·8	18·5

\* These totals are adjusted by deducting the exports and adding the "meat unenumerated," which cannot be apportioned. The imported supply of cheese and butter is less exports.

It is necessary to remember that these figures do not purport to represent literally the whole consumption of meat and dairy products. There is a certain quantity of meat, comprised in what butchers term the "fifth quarter," which is not included, and a considerable quantity of poultry, game, and rabbits must be added before the carnivorous demands of the population can be said to have been entirely met.

In the case of milk the deplorably small consumption per head, especially among the wage-earning classes, is, to some extent, supplemented by separated or skim milk (especially in the rural districts), and also by condensed milk, which finds its largest sale in the poorer urban districts.

The total quantity of separated and skim milk—without taking account of butter-milk and whey—annually produced is very large. The greater part of this is fed to pigs and calves, and there are no means of estimating the amount which comes into human consumption. Large quantities are, no doubt, taken by agricultural labourers in many districts—a fact which partly explains the small average consumption of whole milk among that class. It is used also for bread and biscuit making and other purposes, as well as being sold, to some extent, in the poorer districts of large cities.

#### *Previous Estimates.*

It may be of some interest to compare the estimates arrived at by the Committee with those which have been made at various times by individual investigators. In a memorandum published in the *Journal* of the Society for December, 1902,<sup>1</sup> I briefly discussed and summarised the principal calculations which have been

<sup>1</sup> "Journal of the Royal Statistical Society," vol. lxx, part iv.

made. As regards meat, the methods of constructing an estimate which have been adopted by different persons were described. The method adopted by the Committee has the merit of simplicity, and it resulted in suggesting that on a quinquennial average the proportion of the total number of animals enumerated in Agricultural Returns slaughtered, annually for food was: cattle, 27 per cent.; sheep, 38 per cent.; pigs, 121 per cent. The comparison with some of the chief previous estimates is as follows:—

Authority.	Date.	Percentage Slaughtered.		
		Cattle.	Sheep.	Pigs.
Clarke .....	1871	28·5	50	100
Thompson .....	'72	25	42	116
Clarke .....	1875-78	19	31	136
Macdonald .....	1876	25	41·7	100
Craigie .....	'81	25	40	116
Little .....	'86	25	40	—
Turnbull .....	'93	28·12	36·6	140
<i>Royal Statistical Society's</i> <i>Committee</i> .....	1903	27	38	121

The methods adopted by Mr. Clarke, Sir H. M. Thompson and Mr. Turnbull differed in principle, and the others were based upon one or other of them. The first-named authority, as will be seen, made radical alterations in the basis of his estimates, but that which he adopted in 1875-8 may be taken as best embodying his considered opinion. The estimate made by Sir H. Thompson has been very generally accepted, but, in the memorandum above referred to, it was closely examined, with the result that it was suggested that the percentages, according to the method adopted, were erroneously worked out, and should have been 21, 36 and 136 respectively. Thus corrected, it will be seen that they agree very closely, so far as cattle and pigs are concerned, with the later calculations of Mr. Clarke. If these figures were accepted as a standard for comparison with those now put forward by the Committee, it would appear that there has been a marked increase in the proportion of cattle annually slaughtered, and that the average life of a beast has consequently been reduced very materially.

There is, however, little to be gained from a comparison of calculations based on different methods, and it may be pointed out that the method now adopted for arriving at the number slaughtered may be applied to the official returns for cattle in any year since the agricultural returns were collected. The two estimated factors are the percentage of births and

the "rate of mortality"—i.e., from causes other than slaughter. The figures adopted by the Committee, viz., 90 per cent. in the one case and 4 per cent. in the other, refer, of course, to present conditions, and there is no evidence that they would apply to the conditions of thirty years ago. There is perhaps no reason to suppose that the proportion of calves born has materially changed, but as regards the rate of mortality, it is certain that it was then considerably higher in consequence of the prevalence of contagious diseases which have since been exterminated. It might also be plausibly argued that there has been an improvement in the general management of herds which has had the result of reducing the number of deaths from preventable causes.

The attempt to arrive at an average weight per carcase of live animals when killed presents greater difficulties than the calculation of numbers annually slaughtered. The Committee, however, obtained a large amount of data on this point, and their conclusions, in comparison with the figures taken in earlier estimates, stand as follows:—

Authority.	Date.	Average Weight per Head in lbs.				Pigs.
		Cattle.	Calves.	Sheep.	Lambs.	
Clarke .....	1871	560		56		90
Thompson .....	'72	600		72	24	134
Clarke .....	1875-78	789	112	77	42	149
Macdonald .....	1876	700		70		140
Craigie .....	'84	600		70		134
Turnbull .....	'98	616*	83†	70	35	126
Royal Statistical Society's Com- mittee	1903	660	95	65	40	133

\* Excluding veal calves enumerated in returns, 630 lbs.

† "Marketable" veal calves only, 90 lbs.

The variation in the estimates indicates the uncertainty which has prevailed on this point, and as some of them must have been rather wide of the mark it would be useless to attempt to draw any deductions as to the change which has occurred in the average weight of animals. On general grounds, it is probably true to say that animals, being sold at an earlier age, are not now fattened to so great a size as formerly, while the influence of a preference on the part of consumers for smaller and less wasteful joints has perhaps operated in the same direction. On the other hand, the progressive improvement of farm stock has tended to the more general production of animals which, in butchers' phraseology,

"die well," and has possibly increased to some extent the proportion of the "carcase" to the live weight.<sup>2</sup>

Although, on the whole, British farmers are probably furnishing their countrymen with a larger quantity of meat now than thirty years ago, they have not been able to keep pace with the increasing demands of the population. Consequently the home supply per head is less, but this has been more than made up by increased imports. Whereas now our oversea supplies of meat amount to nearly half a hundredweight per head, they were thirty years ago not much more than a stone (14 lbs.) per head.

As regards milk production, the following estimates of the average yield of available milk—i.e., after deducting for the requirements of calves—have been made at different times:—

Authority.	Date.	Average Yield.
		Gallons.
Morton .....	1878	370
Sheldon .....	'79	385
Morton .....	'85	294
Howard .....	'88	360
Sheldon .....	'89	403
Morton (revised by Long) .....	'92	336
Bew .....	'92	360
Turnbull .....	'98	335*
Blyth .....	'99	480
Royal Statistical Society's } Committee .....	1904	420

\* As stated in the "Field," 31st December, 1898. In the "Highland Agricultural Society's Transactions" for 1898, Mr. Turnbull puts the average for 1892-97 at 34·64 - 5½ cwt. = 28·89 cwt. = 324 gallons.

It will be seen that the Committee's estimate indicates that as compared with earlier estimates there has been a marked increase in the average yield of the cows and heifers of the United Kingdom. That there has been a considerable increase within, say the past fifteen or twenty years, there can, I think, be no doubt. The dairying interest has received perhaps more attention than any other branch of farming—dairy institutes, dairy schools, dairy lectures, butter-making competitions, and the like, have developed great activity, and it would be a cruel comment upon all this

<sup>2</sup> Mr. Turnbull, in the course of some observations which he sent me on the Second Report of the Committee, stated that he thought the average weight of cattle was put too high. He wrote "I am as convinced as I am of my own existence that the average weight does not exceed 640 lbs.; I do not believe it exceeds 630, and I think it possible that it does not exceed 616 lbs." As to sheep and pigs, he agrees substantially with the average weights adopted by the Committee.

energy if no result in the way of increased production had followed. I believe that they have had an appreciable effect. They have probably had little influence on the best herds, but they have done much to level up the general average. The dairy factory system has spread over Ireland within the past fifteen years, and has also to some degree extended in Great Britain; and this makes for increased production in the districts affected. I believe also that the toll of new milk taken by calves has materially decreased. The use of separated milk and of prepared foods for calf-rearing has, I think, released, so to speak, a large supply of milk for human consumption.

The number of cows and heifers in the United Kingdom has increased by about 10 per cent. within the past thirty years, and if the average yield has also increased, the home supply of dairy products is obviously much larger. British farmers have continued to retain the practical monopoly of the milk supply, and they could scarcely expect also to keep pace with the increased demand for cheese and butter. The foreign and colonial supply of cheese per head has doubled, and that of butter has nearly trebled, although in the latter case exact comparison is not possible, owing to the fact that prior to 1887 margarine, or butterine, as it was then called, was not distinguished from the genuine article in the Customs returns.

### *Estimates of Consumption.*

There is a distinct paucity of information throwing any statistical light upon the consumption in this country of those commodities which are not exclusively imported, and apart from estimates of home production, there have been a few attempts to arrive by enquiry at the consumption by particular classes of meat and dairy products.

McCulloch, in 1837, estimated the annual consumption of butter in London at 20 lbs. per head.<sup>3</sup>

Mr. J. C. Morton, from inquiries made in 1865, estimated that the milk consumption in asylums, schools, and institutions was about three-fifths of a pint per head per day, but he considered that about one-fifth of a pint ( $= 9\frac{1}{2}$  gallons per annum) per head might be taken as the quantity consumed by the population generally. In 1878 he raised his estimate to a quarter of a pint per head per day ( $= 11\frac{1}{2}$  gallons per annum).

As an instance of an early attempt to ascertain from actual records the quantities of food consumed, the following examples may be quoted from Porter's "Progress of the Nation":—

<sup>3</sup> "Statistical Account of the British Empire," 1837, vol. I.

Description.	Number of Persons.	Per Head per Annum.			
		Meat.	Milk.	Butter.	Cheese.
		lbs.	Gallons.	lbs.	lbs.
Family (West of London) {	18	370½	26	30½	—
Trading establishment .... {	17	342½	26	24½	—
	114	306½	—	—	—
	167	99½	20	10½	8
Asylum ... {	290	160	—	—	—
	139	236	16	23	21½
	116	104½	38	4½	12
Public estab- {	646	133½	14½	10½	26½
lishments .... {	432	125½	24½	6½	14

It will be seen that of the 1,939 persons of all ages shown in the table, 712 were in asylums, 1,192 in other large establishments, and 35 in private families, and the figures cannot therefore be considered as affording any satisfactory indication of the average consumption of the people.

The amount of food ordinarily consumed by the outdoor labouring classes in the different counties in England and Wales was the subject of a report to the Privy Council in 1863 by Dr. Edward Smith. The inquiries were made by Dr. Smith personally, "in the most exact manner, at the houses of the labourer in every county," and the Report gives a table showing the average quantity of separated fats, meat, milk, and cheese consumed per adult in each county in England and Wales, two children under 10 years of age being reckoned as one adult. From these figures the average weekly food of an adult labourer in 1863 would seem to have included 6 ozs. of separated fats, 1 lb. of meat, a little over a quart of milk, and about 3½ ozs. of cheese.

In the "Reports of Assistant Commissioners to the Royal Commission on the Employment of Children in Agriculture in 1867," estimates of labourers' expenditure in six different counties were given, which showed a consumption of 21 lbs. of pork or bacon weekly by 32 persons, or 34 lbs. per head per annum.

Mr. W. C. Little, in 1878, in an article on "The Agricultural Labourer," in the "Royal Agricultural Society's Journal," quoted what he considered to be a typical instance of an agricultural labourer with a wife and three children, and put their weekly consumption of meat at 4 lbs. and of butter at ½ lb., or 42 lbs. of meat and 5 lbs. of butter annually per head.

In 1889 Professor Sheldon put the consumption of milk at one-third pint per head per diem, or about 15 gallons per annum; of cheese, at 15 lbs.; and of butter, at 14 lbs. annually.

Some indication of the quantities of meat and milk con-

sumed among the working classes may be gathered from the statements of the expenditure of 34 families, comprising 180 persons, published by the Board of Trade in 1889. Side by side with these, it may be interesting to place those collected some fourteen years later, and published in 1896 by the Economic Club.\* These referred to 28 British households, 8 in London, 9 in provincial towns, and 11 in rural districts. They included one instance of the better middle class, which has been omitted from the figures given below, all the remainder belonging to the artisan and working classes, and including several agricultural labourers.

The total weekly expenditure recorded in these two sets of budgets compares as follows:—

	Weekly Expenditure of Thirty-four Families, comprising 180 Persons. 1889.		Weekly Expenditure of Twenty-seven Families, comprising 173 Persons. 1894.	
	s.	d.	s.	d.
Meat .....	117	2	120	8½
Bacon .....	28	5	29	6½
Cheese.....	16	4	13	9½
Butter.....	57	10	49	—½
Milk .....	34	11	34	1½

The close agreement of these two statements suggests that they may be in some degree typical of the expenditure of the working class on these articles of diet, and it would be of interest to know precisely what quantities of food this weekly outlay represents. Some rough approximation to the quantities represented may be obtained by adding the two sets of figures together, and converting the values into terms of quantity at assumed average prices, as follows:—

	Total Weekly Expenditure for 353 Persons.	Estimated Average Price per lb.	Approximate Supply per Head Weekly.	Annually.
	s. d.			
Meat .....	237 10½	7d. to 8d.	1½ lbs.	60 lbs.
Bacon .....	57 11½	8d.	4 ozs.	18 "
Cheese .....	30 1½	8d.	2 "	6½ "
Butter.....	106 10½	1s.	4½ "	15½ "
Milk .....	69 —½	3½d. per quart.	1½ pints	8½ gals.

In a paper on Milk Production and Consumption read before this Society in 1892, I gave some figures showing, as the result of inquiries, the actual daily delivery of milk per family by retailers



in a few typical localities, and the consumption per head calculated from the ascertained figures on the basis of five persons per family :—

Description of District.	Approximate Number of Families Served.	Average Consumption per Day per Family.	Average Consumption per Head.	
			Per Day.	Per Annum.
		Pints.	Pint.	Gallons.
1. West End of London .....	4,000	3·750	0·750	34·218
2. North of London .....	2,000	3·250	0·650	29·656
3. Manchester .....	—	2·666	0·533	24·318
4. „ (middle-class district) .....	146	1·500	0·300	13·687
5. „ (working „) .....	200	1·000	0·200	9·125
6. Small county town .....	90	1·624	0·325	14·828
7. Putney and Wandsworth .....	700	2·286	0·457	20·850
8. Small town (health resort) .....	500	3·000	0·600	27·375
9. East End of London. (1 gallon of milk divided into 37 portions) }	—	0·432	0·086	3·923

Returns were also obtained from nineteen public institutions, none of them being places where there was a medical dietary, which showed an average daily consumption per head of 0·66 pint of milk, 0·54 oz. of cheese, and 0·90 oz. of butter.

In the “Journal of the Royal Agricultural Society” for 1897 Mr. W. E. Bear gave an estimate of 16½ gallons per head as the annual milk consumption of Manchester.

In an article in the “Quarterly Review” for January, 1900, the consumption of milk in London was put at 11½ gallons, and for the whole country at 15 gallons per head annually.

The records of dietaries to which reference has been made may be classified as follows :—

		Annual Consumption per Head.			
		Meat.	Milk.	Butter.	Cheese.
		lbs.	Gallons.	lbs.	lbs.
1840	West End families (Porter) ....	356	26	32	—
'92	„ (Rew) .....	—	34	—	—
'92	West End boarding house (Rew) .....	—	23	29	9
'92	Middle class families (Rew) ....	—	21	—	—
'40	Public establishments (Porter) .....	188	19	8½	20
'92	Public institutions (Rew) .....	—	30	12	20
'63	Adult rural labourers (Smith) .....	52	13	—	11
'67	Agricultural labourers .....	34	—	—	—
'78	„ (Little) .....	42	—	5	—
'92	Working class (Rew) .....	—	9½	—	—
1880 and 1894	„ (Economic) } Club, &c.) .....	65 to 75	8½	15½	6½

*Foreign and Colonial Consumption.*

Any attempt to compare in detail the production of meat and dairy products in this country with corresponding statistics or estimates for other countries would involve a paper which in proportions and pretensions would greatly exceed these casual observations; but a few notes may be offered.

The dairy industry of Denmark is of especial interest to us, whether as producers or consumers. About 43 per cent. of our imported supply of butter, or about one-fourth of all the butter we consume is Danish. The total production of butter in Denmark is estimated to have been in 1896, 141,933,000 lbs. (= 1,267,000 cwts.); and in 1898, 155,716,000 lbs. (= 1,390,000 cwts.).<sup>4</sup> The average consumption per head of butter is put at about 20 lbs., and of margarine at about 10 lbs., or 30 lbs. altogether, which it is observed is "much below the ordinarily accepted estimate of 44 to 55 lbs. per head per annum." It is claimed, however, that according to the statistical data the consumption could not have exceeded 33 lbs. per head. The average yield of milk per cow is estimated at 462 gallons in 1896, and from 446 to 497 gallons in 1898. The consumption of new milk, cream, and half-skimmed milk in households is estimated as representing 11 lb. of whole milk per head per day (= 40 gallons per annum). Calves are reckoned to take on an average 440 lbs. (= 44 gallons) of whole milk. The quantity of milk required to make a pound of butter is reckoned at 27 lbs. (= nearly 22 pints). As regards meat consumption in Denmark, in default of a more recent estimate, I may refer to that given by the U.S.A. Commissioner of Agriculture in 1885,<sup>5</sup> who put the average per head at 76 lbs.

The total production of milk in France, according to the Decennial Enquiry of 1892, was 1,694,294,338 gallons, as compared with 1,500,531,230 gallons in 1882. The average yield per cow was estimated at 352 gallons in 1892, and 330 gallons in 1882. The production of butter in 1892 was 2,593,300 cwts., and of cheese 2,684,280 cwts., and after allowing for exports and imports the consumption per head may be calculated as butter 5.9 lbs., cheese 8.2 lbs.<sup>6</sup> In the Year Book of the French Ministry of Agriculture, 1902, the total production of milk is given as 78,588,761 hectolitres (= 1,728,952,742 gallons).<sup>7</sup>

<sup>4</sup> These estimates were made by Professor Bøggild of Copenhagen, and published in the "Ugeskrift für Landmaend."

<sup>5</sup> Quoted by Major Craigie in "Journal of Royal Agricultural Society," 1887.

<sup>6</sup> "Journal of Board of Agriculture," vol. v.

<sup>7</sup> "Ministère de l'Agriculture," Annales, 1902, p. 616. by Google

The estimated consumption of meat in France (exclusive of horses, goats, mules, and donkeys) was given in the Decennial Enquiry of 1892 as 78 lbs., of which 42 lbs. was beef, 9 lbs. mutton, 26 lbs. pork, and 1 lb. unspecified. Since then the number of cattle has apparently increased by 1,564,000, or nearly 12 per cent., sheep have decreased by 3,028,000, or about 14 per cent., and pigs have increased by 872,000, or about 14 per cent. On the whole, therefore, the output of meat has probably increased, and although imports have somewhat declined and population slightly increased, it is probably safe to assume a *per capita* consumption of 80 lbs., by adding 1 lb. per head of beef and pork respectively.

For Germany I may refer to the estimates quoted by Mr. R. F. Crawford in his "Notes on Food Supply," read before this Society in 1899.<sup>8</sup> Of meat the home production in 1898 was put by an official estimate at 95 lbs. per head, and the imports at 4 lbs. The total supply comprised 43 lbs. of beef,  $3\frac{1}{2}$  lbs. of mutton, and  $5\frac{1}{2}$  lbs. of pork. The estimates of milk production vary widely, but Mr. Crawford adopted 360 gallons per cow as representing the available supply which on a total cow stock (as returned in the Agricultural Census of 1900) of 10,458,631, would, after deducting 5 per cent. for draught animals, give an aggregate of 3,577,000,000 gallons.

In Saxony the number of cows in 1895 was estimated at 465,000, and their average yield of milk per annum at 3,000 litres (= 660 gallons). The total consumption per head of milk was estimated at 210 litres (= 46.2 gallons), of which 120 litres represent fresh milk and the remainder butter and cheese. The average consumption of butter per head was estimated at 33 lbs., of which only one-fifth was produced in Saxony.<sup>9</sup>

In Belgium, the average annual consumption of meat is estimated at 70 lbs. per head, of which  $62\frac{1}{2}$  lbs. are produced at home, and  $7\frac{1}{2}$  lbs. imported.<sup>10</sup> The consumption of butter per head is estimated at 25 lbs. per annum.<sup>11</sup>

In Holland the estimated gross production of butter and cheese in 1897 was 104,281,846 lbs. and 142,113,882 lbs., respectively.<sup>12</sup> Deducting exports, these figures indicate a home consumption of about 13 lbs. of butter and 11 lbs. of cheese per head.

In Sweden the total production of milk in 1900 was estimated at 605 million gallons, the average yield per cow, reckoning

<sup>8</sup> "Journal of the Royal Statistical Society," vol. lxii, part iv.

<sup>9</sup> U.S.A. Special Consular Report, 1902. Creameries, p. 87.

<sup>10</sup> "Journal of the Royal Statistical Society," vol. lxii, part iv.

<sup>11</sup> "Statistics of the Dairy," U.S. Department of Agriculture, 1903, p. 83.

<sup>12</sup> "Journal of Board of Agriculture," vol. vi, p. 371. Digitized by Google

85 per cent. as milk-producing, being 396 gallons. The quantity was thus accounted for :—

	Gallons.
Consumed as milk .....	209,000,000
Fed to calves and other animals.....	22,000,000
Made into cheese or butter .....	374,000,000
	<hr/>
	605,000,000

The average yearly consumption of butter in Sweden is estimated at 15·8 lbs. per head, and of cheese 4·6 lbs. The consumption of meat was estimated for 1885-88 at 62 lbs. per head.

The dairy industry of the United States has recently been reviewed in the light of the census of 1900 by Major H. E. Alvord, Chief of the Dairy Division of the U.S. Department of Agriculture." The average yield of milk is put by the census at 424 gallons, but, after discussing the figures, Major Alvord thinks it should have been put at 418. He, however, accepts the 424 gallons because, "whether right or wrong, the annual average yield per cow as given by the last census will be accepted and used as the basis of computations until more satisfactory data are available." As the American gallon is ·833 of the English gallon, the average of 424 gallons must be reduced to 353 gallons for comparison with our figures. The consumption per head of whole milk in the United States is put at 0·7 lb. per day, or 25 gallons per annum. The consumption of condensed milk is estimated at 2·3 lbs., which is stated to be equivalent to 9·2 lbs. of fresh milk. The consumption of butter is estimated at 20½ lbs., and that of cheese at 3·72 lbs. per head per annum. The gross milk production of the estimated total of 19,000,000 cows is put for the year 1903 at 67,460,000,000 lbs. (=6,746,000,000 gallons approximately), which is utilised as follows :—

	Cwts.
Butter .....	14,732,000
Cheese .....	2,678,000
Condensed milk .....	2,230,000
	<hr/>
	Gallons.
Consumed as milk .....	2,082,325,000

In addition, about 90,200,000 gallons of milk were appropriated for cream, and about 313,975,000 gallons consumed by calves.

For meat I again take the estimate (150 lbs.) given by the Commissioner of Agriculture in 1885.

The number of dairy cows in Australia and New Zealand, and their estimated production of milk in 1902, is given as follows in

<sup>13</sup> "Statistics of the Dairy," U.S. Department of Agriculture, 1903.

the latest issue of that admirable "Statistical Account" for which our Honorary Fellow, Mr. T. A. Coghlan, is responsible.<sup>14</sup> I have added the last column :—

State.	Number of Dairy Cows at end of 1902.	Quantity of Milk Produced (Estimated).	Average Yield per Cow.
		Gallons.	Gallons.
New South Wales .....	351,287	114,742,000	327
Victoria .....	*456,000	149,145,000	327
Queensland .....	*108,800	25,483,000	284
South Australia .....	75,638	23,084,000	305
Western Australia .....	24,324	5,824,000	231
Tasmania .....	33,316	10,590,000	318
Commonwealth .....	1,049,365	328,668,000	313
New Zealand .....	428,773	155,250,000	362
Australasia .....	1,478,138	483,918,000	327

\* Estimated.

The following table shows the average consumption per head of meat, butter and cheese in each of the States of Australasia :—

State.	Meat.				Cheese.	Butter.
	Beef.	Mutton.	Pork and Bacon.	Total.		
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales...	159·7	120·4	12·2	292·3	3·6	20·6
Victoria .....	117·3	71·8	12·2	201·3	3·2	13·7
Queensland .....	280·0	90·0	13·3	383·3	4·2	13·3
South Australia .....	127·0	75·0	11·4	213·4	2·7	12·9
Western Australia...	141·8	133·9	31·4	307·1	6·0	28·5
Tasmania .....	117·8	84·9	14·0	216·7	1·6	17·4
Commonwealth ....	155·5	94·1	13·0	262·6	3·5	16·7
New Zealand ....	90·0	110·0	12·5	212·5	4·4	17·8
Australasia .....	144·4	96·8	12·9	254·1	3·7	16·9

I have not been able to find any figures of the consumption of fresh milk in Australasia, but statistics are given of the annual *per capita* consumption of condensed milk, which amounts to 3·68 lbs. for the Commonwealth, and 1·87 lbs. for New Zealand. The general range in five of the States is from 1·39 lbs. in South Australia and Tasmania to 3·52 lbs. in New South Wales, but the average is raised by the high consumption in Western Australia,

<sup>14</sup> "Statistical Account of Australia and New Zealand, 1902-03": Tenth issue, p. 428.

where no less than 27·82 lbs. per head of condensed milk are consumed.

The figures of the average consumption of meat and dairy products in different countries, which have been given above, may be summarised as follows:—

Country.	Meat.	Milk.	Cheese.	Butter.
	lbs.	Gallons.	lbs.	lbs.
United Kingdom.....	122	15	10·5	18·5
Denmark .....	76	40*	—	20·0
France .....	80	16†	8·2	5·9
Germany .....	99	—	—	—
Saxony .....	—	46	—	33·0
Belgium .....	70	—	—	25·0
Holland .....	—	—	11·0	13·0
Sweden .....	62	40†	4·6	15·8
United States of America .....	150	25	3·7	20·5
Australia .....	262	—	3·5	16·7
New Zealand .....	212	—	4·4	17·8

\* Including cream and half-skimmed milk.

† Calculated from total production, after deducting cheese and butter.

The incompleteness of the figures is apparent, but they embrace those of recent date which, in the very limited time at my disposal, I have been able to find. It will be seen that we appear to be well ahead of other European nations in meat consumption, but appreciably behind our American cousins, and remarkably less carnivorous than our brethren of the Southern Sea. In consumption of milk we have nothing to boast of, but we still retain a predilection for cheese, which is about equally shared by the Dutch. As regards butter we may claim to eat with moderation.

Even within the restricted scope of this comparison, some indication is apparent of that variety of diet which is probably more characteristic of this country than of most others. A glance at the Trade Returns suggests this at once, and even as regards home production I recently ventured to call attention, by a rough calculation,<sup>15</sup> to the large amount of animal and vegetable food of various kinds which is annually supplied by British agriculture.

I am fully conscious, therefore, that I am now only nibbling at a subject which might provide several solid meals for discussion by this Society. The relative consumption of different articles

<sup>15</sup> "The Food Production of British Farms." "Journal of the Royal Agricultural Society," vol. 64.

of food by the various peoples of the world has not infrequently engaged the attention of statisticians, all of whom have recognised the imperfection of the data. It may be that some of the eminent statisticians whom we hope to welcome in London next year, will help to advance our knowledge of comparative national dietaries. In any case, this Society has made a contribution towards an important part of the subject, as it relates to this country, and it may be hoped that one result of the work of the Committee will be to induce others to pursue investigations in a field of statistical enquiry where there is still much virgin soil.

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PROCEEDINGS of the MEETING on 21st JUNE, 1904.

THE PRESIDENT said he was sure the Society had heard with very great interest Mr. Rew's Report on the Work of the Committee on the Production and Consumption of Meat and Milk, and the observations with which he had followed it. All who knew the difficulty of investigating this class of subject, and of co-ordinating such scattered data as existed, would join with him in expressing their appreciation of his services. He desired to make special reference to Sir James Blyth and Mr. Barfoot-Saunt, both of whom had rendered such material pecuniary assistance to the Committee.

MR. BARFOOT-SAUNT proposed a vote of thanks to Mr. Rew, in the absence of Sir James Blyth, who had come with great difficulty to hear the paper read, but was obliged now to go away. As Chairman of the Committee, Sir James Blyth had, he said, done more than any other member had, or could have done, to help Mr. Rew to his conclusions. Personally he had the very greatest pleasure in thanking Mr. Rew, and also in saying how much the Committee had to thank him for the trouble he had taken. Having attended most of the meetings of the Committee, he knew the enormous amount of work that had had to be done. The mere issue and collection of the schedules had involved very great labour. Knowing a little of the difficulty and trouble of getting farmers to give information, he had not expected to get anything like so useful and valuable a statistical result as they had obtained, and, therefore, they had to congratulate Mr. Rew the more on the important result achieved. He thought the Report of the Committee an extremely valuable one, and they must thank Mr. Rew for having investigated this matter with such extreme care and success.

Professor GILCHRIST, in seconding the vote of thanks, said that a paper of this character, arranged in this systematic way, must be of the greatest value to farmers and to those connected with the teaching of agriculture, by enabling them to realise the consumption of the people, and the amount of meat or milk that could be profitably produced in a given area; and how the present means of distribution might be improved.

The PRESIDENT said it was his pleasing duty to take the opportunity afforded by the closing meeting of the session, which ended his Presidency of the Society, to move a hearty vote of thanks to Mr. Rew, not only for the paper now read, but for his labours as reporter of the Committee, and for the trouble he had given to the whole question. It must be remembered that this was by no means the first time he had brought the subject now before them under the notice of the Society. The paper Mr. Rew read twelve years ago had been practically the standard work upon the production of dairy produce in the United Kingdom, and was one of the most useful papers the Society had ever produced dealing with that class of subject. In the statistics which the Committee, aided by the liberality of Sir James Blyth and Mr. Barfoot-Saunt, had collected, they had tapped a new stratum of information, and, with the data previously brought before them by Mr. Rew, this would form a most valuable piece of statistical work. He agreed with the suggestion with which Mr. Rew closed his paper, that the subject of the consumption, if not of the production, both of meat and milk might usefully be taken up by the International Statistical Institute when they received that body in London in 1905. An opportunity would then be afforded for experts from different countries to throw light upon the comparative conditions of different populations in this respect. Some of Mr. Rew's observations, he must confess, under this head were rather startling, but all the results shown were not, he thought, comparable in every case, and the bearing of the figures required a good deal of dissection and perhaps discussion with the natives of other countries in which such different ratios of meat and milk were consumed, before they arrived more nearly at the true facts of each case. Having been responsible for the suggestion three years ago, that the Committee, which had now completed their labours, should enter upon this investigation, he had no reason to feel disappointment at the results accomplished, knowing well from the attempts made on various occasions, how very scanty and unreliable was the statistical information previously obtainable on the subject. The Society was to be congratulated that so good and solid a work had been put together under their auspices, and it was a subject of gratification to him that this had been done during his tenure of the Chair.

The motion was then put, and unanimously carried.

Mr. REW, in reply, said he was extremely obliged for the flattering remarks made about him, but he could have wished that the speakers who had kindly referred to his humble services



had been, if not less complimentary, a little more critical as well. He did not think for a moment that finality had been reached in the figures that had been put forward, though he believed they had taken a considerable step in the direction of solving a problem which, it seemed to him, was of the greatest interest and importance. What always struck one in dealing with economic and statistical questions relating to the welfare of the people, was the paucity of information with regard to the home production of any commodity. Certainly with regard to food they had no exact figures of home production, though they had exact figures with regard to imports, and he could not help feeling that no work which the Society could undertake was more desirable than attempting to supply the deficiencies of their material in that respect. So far as the Committee were concerned, he ought to reciprocate the kind words that had been said of himself, by saying that it was not the case that he had done the whole of the work. Members of the Committee had materially assisted, though naturally the person who had to draw up the schedules, receive the returns and make the reports, had the lion's share of the work. He was personally much indebted for the very valuable help given, at considerable expenditure of trouble and time, by members of the Committee, and especially by two members, Sir James Blyth and Mr. Barfoot-Saunt, to whom reference had already been made. Those gentlemen had not only attended meetings very regularly and devoted much time and trouble to the matter, but had also made the inquiry possible in the more material sense of providing the cost of sending out schedules and the printing involved. He would also again like to express his indebtedness to Mr. Thompson, who had given him valuable help in preparing, in a very limited time, the rough notes presented to-day. He would emphasise what had been said by the President as to the importance of the subject, and reiterate the hope that the International Statistical Institute would devote some attention to it at its forthcoming meeting.

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## MISCELLANEA.

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*I.—Changes in Wages, and Real Wages in Belgium.*

By Professor E. MAHAIM, LL.D.

[Read before Section F (Economic Science and Statistics) of the British Association for the Advancement of Science, Cambridge, 23rd August, 1904.]

In the following essay, I have attempted to deal with a subject which, I venture to think, is of interest to Section F of the British Association.

Mr. Bowley has twice laid before you comparisons of the changes in wages in the United Kingdom and other countries, but his very learned and patient studies do not include Belgian wages. I intended in the first place to supplement the data he brought before you on this subject. Secondly, I assumed it would not be without interest for the discussions which have arisen about fiscal policy, to know the changes of wages in some important trades in Belgium during the past twenty years, corrected by a study of retail prices.

The difficulties of right comprehension and of comparison of foreign statistics are many and great. Usually, we are compelled to overcome them with our own resources. I thought you would not be displeased if a visitor from another nation, adopting the points of view, and to some extent the methods familiar to you,

explained the documents of his country in order to complete your information. This was my purpose; but I must confess that my contribution is, on both subjects, very much smaller than I expected at the beginning.

I. As regards changes in nominal wages, I was able to collect, of course, a great number of data, but very few were comparable, especially in the trades considered by Mr. Bowley.

Taking Table II of his paper of 1898 (reproduced in the *Economic Journal*, 1898, p. 483) as point of comparison, I dared only put together the years of our industrial censuses 1846, 1880, 1896, and even so, the comparison is not very close. The figures are not strictly comparable, as the figures of 1880 are given for adult males and *females*. Besides, we have good reason to repose less confidence in the census of 1880 than in the two others. I added to these sources the agricultural censuses of 1846, 1880, and 1895, which give figures not only for these years, but for some others also.

The Labour Department issued in 1891 the volume on "*Salaires et Budgets ouvriers au mois d'avril, 1891*," which makes it possible to quote some averages for that period; but, as the number of workmen is unknown, and the nomenclature not uniform, and as the wages were fixed otherwise, viz., by the *Conseils de l'industrie et du travail*, composed of employers and employees, I include the figures obtained from this report only as very rough approximations. I, for myself, believe the averages so issued were, for adult males (19 years and upwards), certainly too high. Besides, it must not be forgotten that these figures relate only to one month, the month of *April*, 1891.

The industrial census of 1896 is a masterpiece of care, accuracy, and completeness; but it excluded entirely the "average wage" (*le salaire moyen*). It reproduced the wages actually paid to the workers in the two last normal weeks before 31st October, 1896, based on the pay rolls (*livres du paie*) of the employers, and it would have been very easy for the authorities to have given the average wage. The tables, however, do not give them. We have only the numbers of workers at various amounts rising by increments of 50 centimes. In the summary tabulations of the census, the distinguished authors proceed only by way of the *mode*, stating the average wage in no instance. The fallacies apt to arise from the use of such an average wage are such, that for many purposes I should be prepared to dispense with it; but, unfortunately, for the table we want here, the average wage is absolutely necessary. I calculated it by taking the arithmetic mean of the extreme limits of each class of wage (i.e., taking all the workers from 2 frs. to 2 frs. 50 c., as earning 2 frs. 25 c.). My estimates are, for this reason, a little rougher than would otherwise have been the case.

It should be clearly understood that I agree with Mr. Bowley in doubting the possibility of obtaining very accurate figures in statistics of wages, and especially in changes of wages over a long period of years.

A word as to the weights employed. My weighted averages do

not include women and children, but only the adult males, as given by the censuses (with the exception of 1880, when *adult* females are included). I thought new errors would be introduced if I attempted to make more hypotheses in this respect. Accordingly, I chose as weights the relative number of workmen actually considered in the censuses.

Considered generally, the increase of wages is evident—as was to be expected. The figures for Belgium and for England are very different, however. The former show a much greater increase.

II. In my Tables 2 and 3, the scope is less extended in one sense, more in another.

I first consider the changes of average wage year by year, in some industries, from 1882 to 1902. I employ the word “average” here in the sense of the total sum of money actually paid to the workmen, divided by their number.

I found it, in the first place, for coal-miners, in the (official) statistics of mines. The figures relate to all the coal-miners of Belgium, 103,000 in 1880, 135,000 in 1902. It may be estimated that this number represents about 14 per cent. of all the industrial workers in Belgium. Unfortunately, we have no other general statistics of this kind for other trades.

By the kindness of employers engaged in the standard trades, however, I succeeded in obtaining by the same method average wage statistics for them also.

For the iron and steel trades I obtained the wages of the workmen of the John Cockerill Company, at Seraing, near Liège, which employs 8,000 to 10,000 men. It is our largest business of this trade, and, of course, representative of the whole.

The “Vieille Montagne” Company, our greatest firm in the zinc trade, an old wool business in Verviers—one of the largest in Belgium—and also the only linen factory in Liège, gave me similar figures. I had also many promises, which have not as yet been fulfilled.

Of course, the figures so collected are not of a general character like the figures for coal-miners: they are more influenced by local or individual circumstances.

It must be noticed that it is not easy to get the wages year by year over a long period for exactly homogeneous groups of wage-earners.

I desired to express these wage lists in real wages. My learned colleague, Professor Hector Denis, of Brussels, has constructed index numbers of (wholesale) export prices of twenty-eight articles,<sup>1</sup> but I wished to use index numbers based on *retail* prices. I am, of course, conscious of the actual impossibility of adjusting the numbers to the true consumption of the working classes. To include, in due proportion, all the requisites of life—rent, clothes, fuel, lighting, as well as food of any kind, and those superfluous commodities which are almost indispensable (for instance, spirits

<sup>1</sup> I am very much obliged to Mr. Denis for having given me the unpublished numbers from 1888 to 1902.

and tobacco) is quite out of our reach. Further, it is impossible to be sure, over a long period of years, that we are including the same quality of goods. The bread consumed to-day in Belgium is not like the bread of 1830, 1860, and even 1870. The introduction of new classes of goods (petroleum or gas instead of oil and candles) affords other difficulties. Notwithstanding, I am of opinion that it is better to have *partial* index numbers than no numbers at all; so I thought it was worth while to make an attempt.

I adopted the following method. In the first place I used the figures published by the *Revue du travail*. This review, issued by our Labour Department, gives month by month the *retail* prices of about twenty articles of general consumption amongst the working classes in the principal industrial districts of Belgium: bread (three sorts), meat (five sorts), milk, butter, eggs, fish, coffee, sugar, oil, petroleum, coal, and so on. These prices are collected by the "correspondents" of the Labour Office, who ought to be acquainted with the wants and habits of the workmen. I am not sure that always and everywhere all possible care is taken for obtaining the true *average* price. I suppose also that the correspondents do not revise their data every month. One sees, indeed, that the differences between the figures are greater from place to place than from month to month in the same place—which is, of course, consistent with the probability of the case. Another possible defect is the mistake resulting from comparison of different qualities of the same goods.

I admitted, however, these figures as worthy of tabulation. I took the trouble (the averaging is not done at all in the Review) to revise the data in every case, and discarded those which were not comparable or were evidently erroneous.

As regards weighting, I did not allow different importance to the various districts or places, and resolved to weight the averages only with respect to the relative quantities of goods consumed. Of course, this method assumes that the relative consumption does not vary during the period, and that, contrary to the "law of Engel," the average relative consumption is the same for all the classes of workmen. But, as we deal only with a period of twenty years, as the inquiry of 1891 relates principally to coal-mines and other large industrial works, I thought it was not unjustifiable to admit the comparison.

So far for the figures from the *Revue du travail*. But it starts only from 1896. For the previous years I had to turn to other sources. I soon assured myself that the prices of the "*mercuriales*" (the "*Gazette* prices") were not the same as retail prices, and that the prices of the little shops could not be obtained over a long series of years.

I applied therefore to the largest grocery business in Belgium, the "*Maisons Delhaize Frères et Cie.*" This firm, founded in 1871, possesses to-day 565 branches or shops scattered all over the country, but especially in the industrial districts. It is the prototype, in Belgium, of the "*grand magasin*," and one can say that it has had the most decided influence in standardising and lowering

the prices of general consumption. Its customers, however, are, on the whole, from the working classes; it is not, except for a very few shops in the towns, a grocery firm of the highest class. Their prices are, however, really the retail and selling prices all over the country. Each of its shops, indeed, is bound by contract to sell at the firm prices. Of course, there are many other retail shops in every village, and we cannot pretend that these prices are just the average. We know that the retail prices are not so well levelled, and that there is here much friction in the play of the cost of supply and demand, but it is quite safe to admit that the Delhaize prices indicate at least the level of prices for the bulk of the population.

I obtained from this firm the retail prices of 21 articles, from 1882 onwards, all of which are in general use among the working classes:—Flour, sugar, coffee, chicory (largely used in Belgium as a substitute for coffee), bacon, lard, rice, oil, vinegar, margarine, starch, soap, salt, petroleum, and even towels and brushes.

Taking the average of these prices, I consider I have the changes in average daily shopping-expenses of the housewife. Of course, it fails to be a complete index number of retail prices, for it omits bread, meat, milk, eggs, butter (but includes margarine, the triumphant substitute). The numbers for 1896-1902, calculated from the *Revue du travail*, are more significant. When I set my series of numbers side by side with those of Mr. Denis, I was struck by a certain amount of similarity in variation (see Table 2). At first sight it does not appear, but it is soon obvious, when one keeps in mind that the retail prices follow only *a year later* the variations of the wholesale prices, and that, generally, they do not decrease so much.

Given the relative accuracy of the data, we must be cautious in drawing conclusions from our tables. Some general results, however, must be noticed.

First, the increase of real as well as nominal wages is beyond question. Although subject to the acutest competition from abroad, all the trades under consideration are, on the whole, prosperous.

Broadly speaking, the curve of real wages follows that of nominal, but cuts it in three places: about 1885 it passed over, for about three years (1888), then it remains beneath till 1894-95, where it exceeds the curve of nominal wages as far as the end.

Three maxima are clearly manifest, especially in the wages of coal-miners: in 1883, in 1890, and above all in 1900. The wages in the iron trade show the greater resemblance to those of miners. Those of zinc trades are remarkably stable. In the linen trade, the similarity is less close, and the same is the case in the wool trade.

Index-Numbers (Retail and Wholesale Prices) and Wages, Nominal ——— and Real ———, in Various Trades in Belgium. (1902 = 100.)

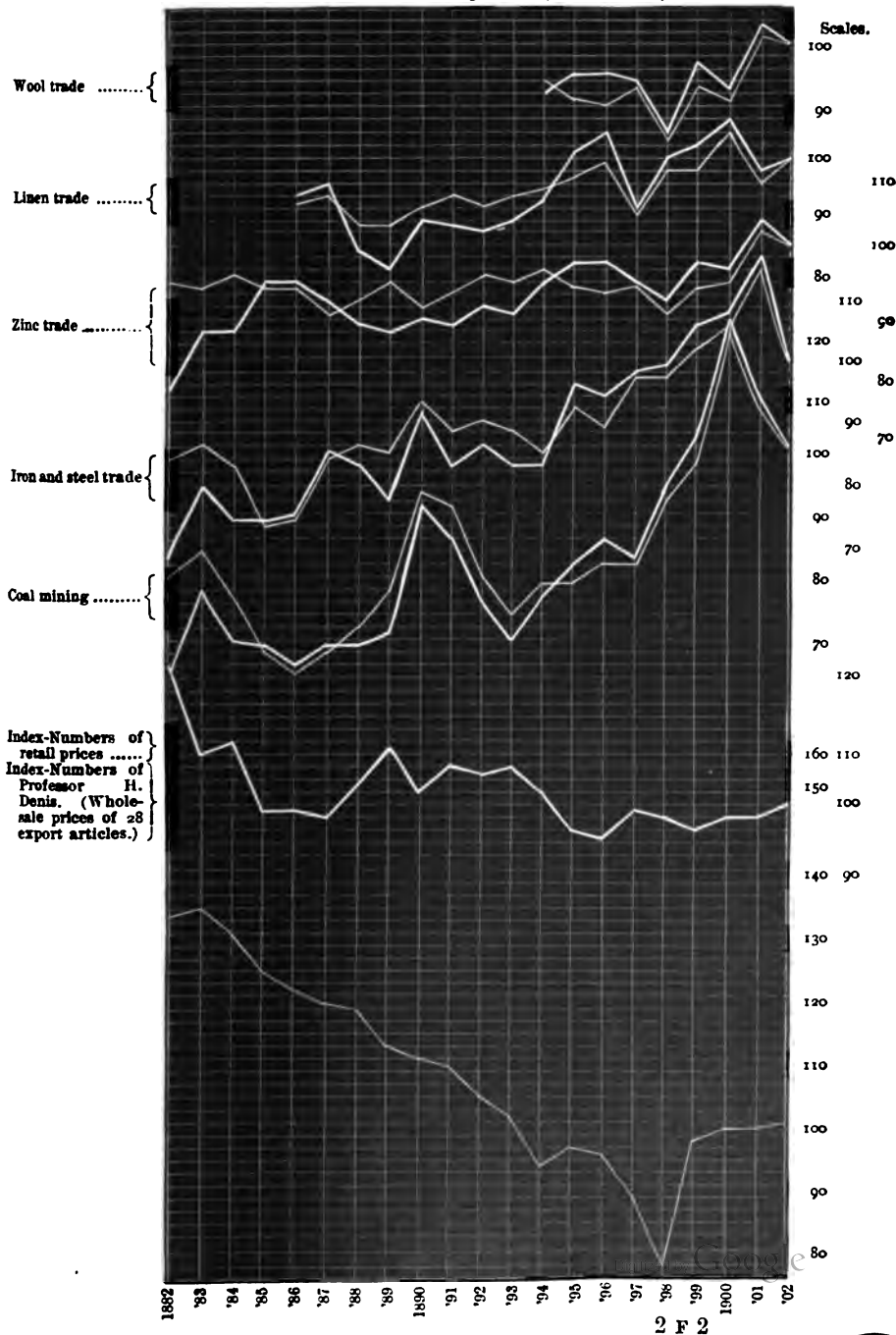


TABLE 1.—*Nominal Wages in Selected Trades in Belgium for Various Years, the Wages of Agricultural Labourers for 1895 being taken as 100, and Weighted Average for all these Trades.*

	1830.	1840.	1846.	1856.	1874.
Cotton .....	—	—	78	—	—
Percentage number of em- ployees (adult males) ... }	—	—	4	—	—
Wool .....	—	—	81	—	—
Number .....	—	—	5	—	—
Building .....	—	—	70	—	—
Number .....	—	—	8	—	—
Mining .....	—	—	104	121	199
Number .....	—	—	15	—	—
Iron .....	—	—	81	—	—
Number .....	—	—	16	—	—
Printers .....	—	—	83	—	—
Number .....	—	—	1	—	—
Agriculture .....	54	57	59	69	103
Number .....	—	—	51	—	—
Weighted average .....	—	—	72	—	—
The same reduced so that 100 represents average wage in 1896 .....	—	—	44	—	—
The same when agriculture is excluded .....	—	—	51	—	—

	1880.	1890.	1891.	1895.	1896.
Cotton .....	130	—	152	—	141
Percentage number of em- ployees (adult males) ... }	3	—	—	—	3
Wool .....	152	—	171	—	163
Number .....	6	—	—	—	3
Building .....	173	—	173	—	148
Number .....	3	—	—	—	16
Mining .....	155	—	183	—	165
Number .....	34	—	—	—	30
Iron .....	186	—	184	—	181
Number .....	6	—	—	—	16
Printers .....	173	—	185	—	182
Number .....	2	—	—	—	1
Agriculture .....	103	90	—	100	—
Number .....	46	—	—	31	—
Weighted average .....	133	—	—	—	154
The same reduced so that 100 represents average wage in 1896 .....	87	—	—	—	100
The same when agriculture is excluded .....	93	—	—	—	100



TABLE 2.—*Index Numbers.*

Years.	Wholesale Prices. Professor H. Denis's Numbers (28 Articles, Export Statistics). Average Prices 1867-77 = 100.	The same. Average Prices 1902 = 100.	Retail Prices. Average Prices 1902 = 100.
1882 .....	82	133	122
'83.....	85	134	108
'84.....	80	129	110
'85.....	87	124	99
'86.....	75	121	99
'87.....	74	119	98
'88.....	75	118	104
'89.....	70	112	109
1890.....	70	110	102
'91.....	69.9	109	106
'92.....	66.5	104	105
'93.....	64.4	101	106
'94.....	59	93	102
'95.....	61.5	96	96
'96.....	61	95	95
'97.....	56	88	99
'98.....	58.5	79	98
'99.....	61.8	97	96
1900.....	63.4	99	98
'01.....	63.1	99	98
'02.....	61	100	100

TABLE 3.—*Showing Nominal and Real Wages in Various Trades in Belgium as per Cent. of 1902.*[The real wages are calculated from index numbers of *retail* prices.]

Years.	Coal Mining *		Iron and Steel.†		Zinc Trade.‡		Wool.§		Linen	
	Nominal Wages.	Real Wages.	Nominal Wages.	Real Wages.	Nominal Wages.	Real Wages.	Nominal Wages.	Real Wages.	Nominal Wages.	Real Wages.
1882 ..	80	65	84	69	94	77	—	—	—	—
'83 ..	84	78	86	80	93	86	—	—	—	—
'84 ..	77	70	83	75	95	86	—	—	—	—
'85 ..	68	69	74	75	93	94	—	—	—	—
'86 ..	65	66	75	76	93	94	—	—	93	94
'87 ..	68	69	84	85	89	91	—	—	94	96
'88 ..	72	69	86	83	91	87	—	—	89	85
'89 ..	78	71	85	78	94	86	—	—	89	82
1890 ..	93	91	93	91	90	88	—	—	92	90
'91 ..	91	86	88	83	92	87	—	—	94	89
'92 ..	80	76	80	86	95	90	—	—	92	88
'93 ..	74	70	88	83	94	89	—	—	94	89
'94 ..	79	77	85	83	96	94	94	92	95	93
'95 ..	79	82	92	96	93	97	91	95	97	101
'96 ..	82	86	89	94	92	97	90	95	99	104
'97 ..	82	83	97	98	93	94	93	94	91	92
'98 ..	92	94	97	99	89	91	85	86	98	100
'99 ..	97	101	101	105	93	97	93	97	98	102
1900 ....	118	120	105	107	94	96	91	93	104	106
'01 ..	106	108	114	116	102	104	101	103	96	98
'02 ..	100	100	100	100	100	100	100	100	100	100

\* 103,000 to 135,000 men (all coal miners of Belgium).

† 8,000 to 10,000 workers (the John Cockerill Company in Seraing).

‡ 1,000 to 1,300 workers (the Vieille-Montagne Works).

§ 1,700 to 1,800 workers of a large firm in Verriers (Peltzer et fils).

|| 1,000 to 1,200 workers in Liège (Linière St. Léonard).

## II.—*Extracts from the Report of the Committee of the British Association Appointed to Inquire into the Accuracy and Comparability of British and Foreign Statistics of International Trade.*

*Members of the Committee:* Dr. E. CANNAN (*Chairman*). Dr. B. GINSBURG (*Secretary*), Mr. A. L. BOWLEY, Professor S. J. CHAPMAN, Sir R. GIFFEN, and Mr. R. H. INGLIS PALGRAVE.<sup>1</sup>

THE Committee decided to restrict its inquiries for the present year to the following countries: United Kingdom, United States,

<sup>1</sup> The Committee added Mr. A. J. Sargent to their number. Mr. Palgrave was unfortunately unable to take part in their proceedings.

Germany, France, Belgium, Holland, Russia, and Austria. They also decided to consider mainly questions of value rather than of quantity. They divide their report under the following ten headings:—

- A. Definition of international trade.
- B. Methods of estimating value.
- C. Registration of origin and destination.
- D. Changes in A, B, and C in recent years.
- E. The discrepancies between statistics published by different countries.
- F. Relation of total of exports to the produce of a country.
- G. Relation of the statistics of imports and exports to the balance of trade.
- H. Accuracy of the figures of the United Kingdom.
- J. Conclusion and suggestions.
- K. Bibliography.

#### *A. Definition of International Trade.*

At first sight it seems a simple matter to define foreign or international trade. To the ordinary apprehension it would appear that a complete account of international trade would give, in the first place, particulars of the quantity and value of every kind of goods crossing international frontiers in each direction. There is little difficulty in imagining an ideal world in which it would be quite easy to collect and publish such statistics, but in the actual world things are not nearly so simple. Even the position of the national frontier is not always what we should expect; for example, trade between France and Corsica, and between the United States and Hawaii or Porto Rico, is domestic trade; though trade between France and Algeria, and between the United States and the Philippines, is international trade. This is a simple matter compared with the complication introduced by the existence of free zones, like the free port of Hamburg in Germany, and that of Copenhagen in Denmark. Yet the position of the customs frontier is among the least of our difficulties.

We can easily imagine a world in which international trade, or goods carried across a national frontier, fell into four distinct classes, as follows:—

#### *Imports.*

CLASS 1.—Goods imported which will be used or consumed at home.

CLASS 2.—Materials and components imported in order to be made up in the country and then exported.

CLASS 3.—Goods imported which will be sold for export without change of form.

CLASS 4.—Goods simply passing into the country on their way to another country without changing ownership within it.

#### *Exports.*

Goods produced at home and exported.

Manufactured articles made up of foreign materials and exported.

Goods of foreign origin exported after purchase and sale within the country.

The same goods passing out of the country.

The first is sometimes called "special trade," the second "improvement trade" (*Veredelungsverkehr*), the third may be called *entrepôt* trade, and the fourth "transit and transshipment trade." The sum of the four may be called "general trade," or this title may be confined to the sum of the first three.

In the real world, however, these four classes are not sharply divided by distinct and easily ascertainable lines of demarcation. It is often impossible for anyone to say for certain when an article is imported, whether it belongs to the first, second, or third class. When an article is exported the exporter has frequently no exact knowledge as to its origin, and when it is made up of various components or ingredients, part of domestic origin and part of foreign origin, it becomes impossible to classify it under the first or second head without adopting some arbitrary standard as to the degree in which a commodity must contain foreign ingredients before it can be classified as of foreign origin. Again, the distinction between the third and fourth class is a slight one, not always easy to verify. Finally, the fourth class is not very distinctly divided from goods carried in ships past the country instead of into the country and out of it. No one would propose to reckon in the transit trade all the goods in ships which have simply passed through the territorial waters of a country, nor even those in ships which have called at a port to coal; but as to what amount of detention and manipulation in port is required to constitute arrival and departure of goods, considerable difference of opinion may legitimately prevail.

As the benefit derived from international division of labour or localisation of industry is frequently very small, it is often the case that transactions in Class 2 are just as advantageous to a country as transactions in Class 1, but popular opinion tends to regard the "special trade" as more important than the "improvement trade," the improvement trade as more important than the *entrepôt* trade, and the *entrepôt* trade as more important than the transit trade. Consequently, most countries have been in the habit of devoting more attention to the earlier classes than to the later, and the result has been that the statistics of the later classes are not sufficiently complete to allow of useful comparison between the totals for all four classes.

The unfortunate result of this is that we cannot keep clear of questions of classification in the comparison of statistics of international trade. We have to compare totals which confessedly do not include all imports (all things carried in) and all exports (all things carried out), but only a portion of them, and the different countries do not agree as to what portion should be included.

It is becoming the practice to call the portion of foreign trade of which the more detailed statistics are kept, the "special trade," and the whole or any larger portion of foreign trade of which any statistics of totals (quantity or value or both), the "general trade," but the distinction is not always applicable, and is sometimes confusing.

In the United Kingdom the largest totals for imports includes

everything except gold and silver and goods for transshipment,<sup>2</sup> the largest total for exports ("British and Foreign and Colonial produce") includes everything except gold and silver and goods transhipped.<sup>3</sup> The transshipment trade of imports and exports of bullion are given separately. The grand total of exports just described is divided into totals for "British produce" and for "Foreign and Colonial produce," the information as to the division being obtained from the exporters—British produce meaning, apparently, not only everything grown, but also everything manufactured in the United Kingdom, whether composed in part or wholly of foreign materials or not. The grand total of imports is divided, so far as quantities are concerned, into totals "retained for home consumption" and re-exports. Thus, if the smaller totals be taken as "special" and the larger as "general" trade, it may be said that the United Kingdom special trade includes our ideal Classes 1 and 2, and the general trade Classes, 1, 2, and 3.

The United States arrangement is the same in theory, but instead of the home consumption being ascertained by deducting quantities re-exported as declared by the exporters from the total imported, it is taken simply as the quantity and value "entered for consumption" at the customs warehouse or barrier; and all goods passing out over the customs barrier are treated as home produce. Re-exports appear to include only goods which have remained in the control of the customs.

France includes in the "general trade" everything coming in or going out, except gold and silver, so that her grand totals include all four of our ideal classes. In "special trade" she includes only Class 1, and such part of Class 2 as has paid duty; but sugar is treated exceptionally, all imports and exports being included.

The German "special trade" totals include Classes 1 and 2, and such part of 3 and 4 as are not liable to duty and have not been declared for re-export; "general trade" totals include in addition foreign goods re-exported after they have been in the customs warehouse. Trade with the small districts (in Hamburg, &c.) which are free of duties is regarded as foreign trade. Duty-free material for shipbuilding is not included in any of the returns, nor goods sent abroad to undergo a manufacturing process and be returned. Many changes have been made in these definitions (see Section D below).

Belgium follows France as to general trade; her special trade includes Classes 1, 2, and 3.

Holland also follows France as to general trade, but compiles no returns of value for it. As to special trade, the Dutch returns include Classes 1, 2, 3, and, it is said, much of 4.

Russia includes Classes 1, 2, and 3 in special trade.

Austria includes Classes 1 and 3. Neither Russia nor Austria compile totals of general trade.

Attention may be specially called to the general absence of

<sup>2</sup> A small quantity of these goods passes from port to port under customs control.

adequate distinction between home and foreign produce in exports. In the case of duty-free goods, the foreign produce is in general included in special exports, a category generally supposed to include home produce only; if dutiable goods have paid duty and are then re-exported, they are also included as home produce. Thus France includes 44,000,000 francs' worth of cotton in her special exports. The lines of division are determined rather by fiscal circumstances than by economic principles.

*Table showing Roughly what Classes of Goods (see above, p. 441) are Included in the Return of Special Trade of Various Countries.*

United Kingdom: .....	{ Imports: Classes 1, 2, and 3. Exports: Classes 1 and 2.
United States of America .....	Classes 1, 2, and 3 (if duty free).
France .....	{ Class 1, and Classes 2, 3, and 4 if duty has been paid, or if they are not distinguished by importers from Class 1, and all sugar in Class 2.
Germany .....	{ Classes 1, 2, and most of those parts of Classes 3 and 4 which are duty free.
Belgium .....	Classes 1, 2, and 3.
Holland .....	{ Classes 1, 2, 3, and a large part of 4 not adequately distinguished.
Russia .....	Classes 1, 2, and 3.
Austria .....	Classes 1 and 3.
* .....	*
* .....	*
* .....	*
* .....	*
* .....	*

#### *D. Changes in A, B, and C in recent years.*

*United Kingdom.*—Value of ships and boats (new), with their machinery, has been included among the value of exports of home produce in 1899 and subsequent years. Changes were made in systems of valuation and tabulation in 1854 and 1870.

*United States.*—Since 1898 the statistics given are sometimes for the year ending 30th June and sometimes for the calendar year. Great care must be exercised to know which is quoted in particular lists. Porto Rico and Hawaii have been regarded as part of United States, America, in the trade statistics since 1st July, 1900. The Philippines are still treated as foreign.

From 1866 to 1883 the values of imports included their whole cost up to their arrival in United States, America, together with a commission of at least  $2\frac{1}{2}$  per cent. From 1st July, 1883, the values were taken as those at the place of manufacture before being packed; since 1st August, 1890, the value has been taken of the goods packed and delivered at the port ready for shipment, but no sea freight is included.

*France.*—There have been no changes of importance since 1847, except that the registration of goods, according to origin and destination, has been improving since 1870. Before 1895, provisions taken on board ships for use in the voyage were regarded as exports to the countries for which the ships were bound; they are now entered separately as "Provisions de bord."

*Austria.*—In 1885 goods were credited to the adjacent country over whose frontier they passed; in 1895 the real origin and destination were entered. The date of the change appears to have been 1890, when the trade returns were reformed.

*Belgium.*—The value of rough diamonds imported and cut diamonds exported, has been included only since 1897. Revised instructions as to registration of origin and destination were issued in 1882 and 1897, but these made no change in principle.

The Committee know of no changes in the methods of dealing with trade statistics of *Holland* or *Russia*.

*Germany.*—Changes have been so frequent and so complicated, that it is a matter of the greatest difficulty to compare year with year. In 1879 the whole system of the trade statistics was transformed, and comparisons between years before and after that date are practically impossible.

Before 1884 "a large class of imports and exports were specifically excluded, namely, all articles imported free of duty for working up and for exportation in a more finished condition (improvement trade)." For some time after 1884 separate totals were given for "special trade," including and excluding improvement trade, while the "general trade" totals included it. Since 1897 only the inclusive total has been published. Great care must therefore be exercised before using these totals in deciding how this trade is treated.

From 1897 the value of ships exported or imported have been included in special and general trades.

Changes of tariff have frequently affected the inclusion of commodities under one or other of the totals, as can be seen by examining the definitions given in A above; there seems no possibility of estimating their effect.

Considerable changes took effect in 1889, when parts of Hamburg, Bremen, and other less important districts, hitherto treated as foreign, were included in the Zollgebiet. At the same time transit trade was excluded from general imports and exports.

*General.*—Comparisons year with year in the statistics of most of the countries discussed are liable to be vitiated (1) by changes in fiscal laws by which goods are transferred from the free to the dutiable list, and therefore (see remarks under A) from general to special trade in the enumerations; (2) by the continual alteration in trade routes, by which goods may appear in the statistics of, say, France instead of Germany, without any change in their origin or destination, and for reasons already explained, affect the "special" as well as the "general" trades of these countries; (3) by the varying success with which goods are credited to their countries of origin and of destination.

\* \* \* \* \*

#### E. *The Discrepancies between Statistics published by Different Countries.*

Many attempts have been made to reconcile the statistics of different countries, but invariably without success. For examples see the official publications, *Trade between the United Kingdom and*

*France*, 1881; *Trade of the United Kingdom with Germany*, 1904; and *Reports on Tariff Wars between certain European States*, 1904; see also Sir Robert Giffen's paper on the "Use of Import and Exports Statistics," 1882, and Mr. Ellinger's papers in the *Economic Review*, 1902, and at the Manchester Statistical Society, 1904 (see Section J below).

In no case that the Committee knows of do the values registered by country X of goods imported from country Y correspond at all closely with the values registered by Y as exported to X.

As just explained, it is not in general necessary to assume inaccuracy in the returns to account for this, for the differences in methods of tabulation necessarily cause very great discrepancies. Take the case of England and Belgium. We valued our exports of home produce exported to Belgium at 11,000,000*l.* sterling, and of foreign produce at 4,000,000*l.* in 1900. Belgium valued what she received at 300,000,000 *frs.*, say 12,000,000*l.*, in her special trade. Of the goods we sent to Belgium, a great part would no doubt pass on to other countries, and in spite of regulations much of this would be entered as going to Belgium only. Indeed, the English exporter might not know its destination beyond an agent at Antwerp. On the other hand, the Belgian importer would credit part of the 4,000,000*l.* which we described as foreign produce to the United Kingdom, and only part to the real country of origin. Such illustrations might be multiplied indefinitely. The reader is referred to the papers just named for analyses of special cases.

In addition to questions of destination, the method of valuation causes differences, especially where official values linger behind market values.

Again, goods leaving X for Y may not be delivered in Y in the same year, or they may remain in the customs warehouse of Y for many months; exact correspondence year by year is therefore not to be expected. It follows that we do not know the value of our export trade, even if we assume the statements to be made correctly, to any of those countries where transit trade is of importance, and even when we group them together, there is much uncertainty; nor can we use the statistics of foreign countries to check our own. Similar remarks apply to imports. Further, we cannot estimate the total international trade of the world, or of the main groups of countries, for neither the general trade nor the special trade is defined in the same way in different countries, and the totals cannot therefore correctly be added.

In the previous paragraphs it is assumed that the returns of quantities and values are correctly made. Below, we show reason to think that this is not invariably the case in the United Kingdom. We have no means of investigating the accuracy of the statistics of foreign countries in general; but the process of valuation seems very faulty where official values are employed, and declared values are subject to bias, especially as they are found for the most part in the case of dutiable goods. The following comparison of the returns of trade between Europe and the United States shows how far we can obtain agreement in a case where, if



the returns were accurate as to value and destination, there should apparently be close correspondence. This instance is taken because the basis of valuation is very nearly the same in the exporting and importing countries, for freight is not included in either.

We put all Europe, so far as figures are available, together in order to avoid confusion of origin. The visible sources of error are the inclusion of Italian exports to Canada, which cannot be separated, and possibly of some Asiatic produce going from Russian Asiatic ports; some goods registered in Europe as going to the United States may be there treated as in transit for Canada or elsewhere; while some European trade to Canada may find its way into the United States; and in the table is included \$666,000,000 (for the ten years) value of foreign goods re-exported by us, counted in our trade, and in many cases in continental trade also. It will be observed that neither the amounts nor the dates of change correspond at all closely; that, in fact, we should not know from inspection of the figures that they related nominally to the same phenomena; and that we can only obtain an agreement even within 5 per cent. when we take the totals for ten years, giving the various errors the best chance of neutralising one another.

\* \* \* \*

#### *J. Conclusion and Suggestions.*

The Committee are much impressed by the extreme difficulty of handling statistics of International Trade, even when dealing with the reports of the United Kingdom, whose genesis and meaning are well known to them. They recommend extreme caution in using any such statistics, for even when regard is paid to all the definitions, limitations, and sources of error analysed above, it is not at all easy to know within what limits of error the statistics may be trusted. It is possible, however, to discriminate, and to state that some of the difficulties are comparatively unimportant. The treatment of improvement trade is a small matter. The differences in method of estimating values in the United Kingdom, France, Germany, Russia, and Austria should not have much effect when a period of more than a year is in question, while the methods of Holland and the United States of America make comparison with other countries very difficult. The inaccuracies in price statements in the United Kingdom are probably of not much importance in the main lines of goods, and the aggregate value is not much affected. It is probably safe to compare the records of total imports and total exports in particular countries with their own previous records, if we pay the necessary attention to the changes discussed in Section D above. In Germany we cannot go back beyond 1880. There is a widespread distrust of the trade statistics of the United States of America. We can compare the rates of increase in one country with those of another more safely than we can compare the actual amounts in particular years. On the other hand, we cannot all easily compare either the total special or the total general trades of one country with those of another.

We cannot divide a country's exports into those of home produce and of foreign produce in any systematic way. We cannot, however we group countries together or analyse the figures, use the statistics representing the total trade between two countries or two groups of countries, except in the roughest way, for purposes which would not be affected by a great percentage error.

The Committee make the following suggestions, which should rather be regarded as statements of the kind of information they have specially felt the want of, and which does not seem impossible to obtain, than as final expressions of opinion as to the best way of remedying the defects in our knowledge. They, however, attach considerable importance to No. 6.

1. That the Board of Trade should make an inquiry, to whatever extent and in whatever way proves practicable, as to the prevalence of erroneous statements, especially of value of exports.

2. That the Board of Trade should make an estimate of the extent to which export trade is done on a c.i.f. basis, and as to whether any source of error is introduced in the published values by this development.

3. That in the same way an estimate should be made as to the over-valuation of imports when they are valued at market prices.

4. That the classification of goods by quantity and quality at present in use is not perfect, and that the Board of Trade should consult the chambers of commerce and others as to the methods of improving it.

5. That it should be considered whether exports of textile goods cannot be entered in some way which will give more detailed information, and make the returns more easily comparable with those of foreign countries.

6. It is very advisable for the sake of the public who use the official publications that a reasoned statement relating to the accuracy and exact meaning of the returns should be inserted in every Annual Statement of Trade, and in a more contracted form in the Statistical Abstract for the United Kingdom and in the Monthly returns. In the same way a careful and brief criticism of the meaning and accuracy of the statistics of trade of foreign countries should be inserted in the Statistical Abstract for the Principal and other Foreign Countries. As it is, it is a matter of the very greatest difficulty for even the educated public to attach the right meaning to the official returns.

The Committee regard with satisfaction the steps the Board of Trade have taken in Cd-1761 and No. 131 of 1904 to inform the public on these matters, and trust that publications of this nature will continue to be issued.

If the Committee are re-appointed they will be able to develop and extend the analysis they have already made, but they wish to represent that the inquiry is far too involved and difficult for them to carry to a complete issue, and that it should properly be taken up by the Government department concerned.

K. *Bibliography.*

The Committee append a list of the papers consulted in their investigations. They have found their labours considerably lightened by the reports drawn up by Sir Alfred Bateman for the International Institute of Statistics, in the volumes named below.

"The Official Trade and Navigation Statistics," Bourne, *Journal of the Statistical Society*, 1872.

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Statistics of the Foreign Trade of Germany: C. 5597 of 1888.

British Trade and Production, 1854-95: C. 8211 of 1896 (p. 70).

Comparative Statistics of Population . . . in the United Kingdom and some leading Foreign Countries: C. 8322 of 1897, and Cd-1199 of 1902.

British and Foreign Trade and Industry: Cd-1761 of 1903.

Tariff Wars between certain European States: Cd-1933 of 1904.

Trade of the United Kingdom with Germany: No. 131 of 1904.

III.—*Life-Table for Scotland, based on the Census Enumerations of 1891 and 1901, and on the Recorded Deaths for the Decennium 1891-1900.* By T. ADAM, M.A., M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.P.H. (Camb.), *Public Health Laboratory, Glasgow.*

THE basis now usually adopted in the construction of a general Life-Table is obtained from the results of two consecutive census returns, and from the deaths registered during the corresponding decennium. For the present Life-Table for Scotland the census enumerations of 1891 and 1901, and the registered deaths during the decennium 1891-1900, supply the figures. The Graphic method, so ably advocated and illustrated by Dr. Newsholme in his *Vital Statistics*, and also in the *Journal of Hygiene*, has been followed.

The above figures being comparatively recent, the results obtained from them, when applied to the present, will be all the more trustworthy, since the conditions affecting the duration of life will have had less time to undergo change.

The census returns for Scotland for 1891 and 1901 are given in Tables 1 and 2, which show the following numbers and age-distribution of the population:—

The total deaths which occurred during the decennium 1891-1900 are also apportioned to their proper age-periods, as shown in Tables 5 and 6.

TABLE 1.

Ages.	Males.	
	Census 1891.	Census 1901.
Under 1 year .....	54,723	58,018
„ 2 years .....	48,573	52,771
„ 3 „ .....	51,030	53,294
„ 4 „ .....	50,352	52,293
„ 5 „ .....	50,104	51,986
0—5 .....	254,782	268,362
5—10 .....	241,726	249,312
10—15 .....	229,237	233,288
15—20 .....	210,954	230,353
20—25 .....	174,108	210,392
25—35 .....	274,142	332,267
35—45 .....	211,053	251,339
45—55 .....	158,680	184,159
55—65 .....	105,140	121,172
65—75 .....	58,550	63,290
75—85 .....	21,344	22,023
85—95 .....	2,943	2,697
95—105 .....	108	101
105 and above .....	—	—
All ages .....	1,942,717	2,173,755

TABLE 2.

Ages.	Females.	
	Census 1891.	Census 1901.
Under 1 year .....	52,929	56,667
„ 2 years .....	47,252	51,802
„ 3 „ .....	49,362	52,818
„ 4 „ .....	49,469	52,841
„ 5 „ .....	48,597	51,043
0— 5 .....	247,609	264,671
5— 10 .....	235,868	243,435
10— 15 .....	223,003	231,084
15— 20 .....	207,435	225,682
20— 25 .....	189,512	222,896
25— 35 .....	308,890	361,915
35— 45 .....	231,531	271,990
45— 55 .....	186,568	201,180
55— 65 .....	132,363	147,199
65— 75 .....	81,369	87,682
75— 85 .....	33,246	35,117
85— 95 .....	5,303	5,824
95— 105 .....	230	270
105 and above .....	3	3
All ages .....	2,682,930	2,298,348

TABLE 3.

Ages.	Males.	
	Central Population for each Age-Period.	
	1891.	1901.
0— 5 .....	255,113	268,711
5— 10 .....	241,913	249,605
10— 15 .....	229,459	268,519
15— 20 .....	211,418	230,860
20— 25 .....	174,934	211,390
25— 35 .....	275,463	333,868
35— 45 .....	211,977	252,439
45— 55 .....	159,223	184,847
55— 65 .....	105,514	121,603
65— 75 .....	58,664	63,413
75— 85 .....	21,361	22,040
85— 95 .....	2,937	2,691
95— 105 .....	108	101
105 and above .....	—	—
All ages .....	1,948,084	2,179,987

TABLE 4.

Ages.	Females.	
	Central Population for each Age-Period.	
	1891.	1901.
0—5.....	248,022	265,112
5—10.....	236,054	243,627
10—15.....	223,200	231,238
15—20.....	207,873	226,158
20—25.....	190,282	223,802
25—35.....	310,116	363,351
35—45.....	232,465	273,087
45—55.....	186,920	201,560
55—65.....	132,715	147,590
65—75.....	81,520	87,795
75—85.....	33,292	35,165
85—95.....	5,304	5,325
95—105.....	231	271
105 and above.....	3	3
All ages.....	2,087,997	2,304,084

TABLE 5.

Ages.	Males.		
	Total Number of Lives at Risk in the Ten Years 1891-1900.	Total Number of Deaths in the Ten Years 1891-1900.	Mean Annual Death-Rate for each Life at Risk.
0—5.....	2,611,836	143,414	0.0549093
5—10.....	2,452,989	12,053	0.0049136
10—15.....	2,335,232	7,425	0.0031796
15—20.....	2,200,317	11,341	0.0051543
20—25.....	1,907,695	13,061	0.0068465
25—35.....	3,008,241	23,203	0.0077131
35—45.....	2,296,003	26,232	0.0114251
45—55.....	1,704,358	32,432	0.0190289
55—65.....	1,125,656	40,251	0.0357578
65—75.....	607,678	41,541	0.0683602
75—85.....	216,476	29,919	0.1382098
85—95.....	28,305	7,918	0.2797886
95—105.....	1,048	447	0.5209924
105 and above.....	—	Doubtful age 99	
All ages.....	20,495,834	389,336	0.0189958

TABLE 6.

Ages.	Females.		
	Total Number of <i>Lives at Risk</i> in the Ten Years 1891-1900.	Total Number of <i>Deaths</i> in the Ten Years 1891-1900.	Mean Annual Death-Rate for each Life at Risk.
0— 5.....	2,556,087	121,277	0·0474464
5— 10.....	2,394,246	12,563	0·0052472
10— 15.....	2,268,059	8,187	0·0036097
15— 20.....	2,159,663	11,191	0·0051818
20— 25.....	2,049,200	12,328	0·0060160
25— 35.....	3,333,751	25,997	0·0077981
35— 45.....	2,502,048	26,046	0·0104099
45— 55.....	1,934,256	29,443	0·0152245
55— 65.....	1,392,764	40,519	0·0290925
65— 75.....	843,108	49,174	0·0583247
75— 85.....	341,163	41,286	0·1210155
85— 95.....	53,138	13,493	0·2539237
95—105.....	2,475	1,006	0·4051896
105 and above ..	80	Doubtful age 9 }	
All ages ....	21,829,988	392,524	0·0179809

A fact to be remembered at the outset is that the census is taken at the end of the first quarter of the year. For the present purpose, however, the population at the end of the second quarter, *i.e.*, on 30th June, must be obtained, and this is called the central population.

The central population for each age-period has been obtained by assuming that a population increases in geometrical progression, an assumption which gives a close approximation to the facts. The results of the various calculations are given in Tables 3 and 4.

The central population for each of the age-periods of 1891 and 1901 having been obtained, the total number of lives at risk, *i.e.*, the aggregate central populations, are then calculated for the decennium 1891-1900. These are given in Tables 5 and 6.

— \*Once the total number of lives at risk have been calculated, they may be said to have been brought into line with the total deaths for the decennium as obtained from the Registrar-General's report.

The point that has now been reached is that the aggregate central populations and the aggregate deaths have been obtained for age-periods. The next step is so to distribute these populations and deaths that the proper number will be apportioned to each year of the age-periods. The "interpolation" has been accomplished by the Graphic method, which was used first by Milne in the construction of the Carlisle Table of Mortality, and quite recently by Dr. Newsholme in both his Brighton Life-Tables. The results of the "interpolation" are given in Tables I and II appended.<sup>1</sup>

<sup>1</sup> Two diagrams, representing graphically the distribution of total lives at risk and deaths, had to be omitted owing to exigencies of space.

Although the Graphic method of interpolation gives accurate results for the greater part of life, it cannot be depended upon for the first five years, or for the age-groups at the end of life. For the first five years a method of getting the  $p_x$  values described by Dr. Hayward and reproduced in the "Vital Statistics" has been followed.

The  $p_x$  values must now be calculated for the remaining years of life, and this has been accomplished from  $p_5$  to  $p_{87}$  by means of the formulæ  $p_x = \frac{p_x - \frac{1}{2}d_x}{p_x + \frac{1}{2}d_x}$ . It was discovered that the Graphic method gave unsatisfactory results for the probabilities after  $p_{87}$ . It was found advisable, therefore, to adopt a method giving a steadily decreasing value for " $p$ " after  $p_{87}$ , using as a basis the values of " $p$ " preceding  $p_{87}$ . This is the method of differences of the logarithms of the probabilities already known. All the  $p_x$  values having been obtained, the sequence of numbers in the  $l_x$  column is got by the process of multiplication.

The next column, viz.,  $P_x$ , is derived directly from the  $l_x$  column, and shows the mean number living in each year of life. For the first year of life the value of  $P$  has to be calculated by a special method, as the deaths in that year are very unevenly distributed. The method adopted is that recommended by Drs. Newsholme and Stevenson in their joint paper in the *Journal of Hygiene* (p. 306) issued 29th July, 1903.

#### *Analysis of Tables III, IV, and V (appended).*

The object of a Life-Table is to get a standard by which to measure the vitality of a population, and to act as a means of comparing (1) the vitality of one population with that of another, as well as (2) that of the same population at different times. When values and differences are expressed by exact numerical facts, they are more easily comprehended and appeal more forcibly to the mind.

It is agreed that, for purposes of measurement and comparison, the three points in a Life-Table that should absorb most attention are:—

- (1) The probability of living a year at each age.
- (2) The number of survivors, at the end of each year of life, out of a given number born.
- (3) The mean after-lifetime or expectation of life at each age.

These three points have to be considered for both males and females. The first is dependent for each year on the lives and deaths of that year. It therefore is an expression of the conditions present in any year which may be under consideration, and is affected neither by past nor by future lives and deaths. In Table V of those appended the probabilities for the different ages are given. The following Table 7 also gives the probabilities at several ages in Scotland, England and Wales, London and Brighton for 1891-1900, and in Glasgow for 1881-90:—



TABLE 7.

## MALES.

Age.	Scotland. 1891-1900.	England and Wales. 1891-1900.	London. 1891-1900.	Brighton. 1891-1900.	Glasgow. 1881-1890.
0.....	0·8565670	0·82861	0·81588	0·8319402	0·82531
5.....	0·9934317	0·99298	0·99141	0·9933582	0·98417
10.....	0·9968296	0·99770	0·99775	0·9978542	0·99455
15.....	0·9961450	0·99678	0·99689	0·9970452	0·99347
20.....	0·9937439	0·99541	0·99588	0·9952317	0·99219
25.....	0·9927550	0·99453	0·99477	0·9941232	0·99187
35.....	0·9906594	0·99083	0·98880	0·9906840	0·98831
45.....	0·9853855	0·98503	0·98177	0·9840304	0·97920
55.....	0·9720708	0·97391	0·96892	0·9739014	0·96439
65.....	0·9508356	0·95008	0·94348	0·9532772	0·93675
75.....	0·8943144	0·89368	0·88619	0·9093900	0·88267

## FEMALES.

Age.	Scotland. 1891-1900.	England and Wales. 1891-1900.	London. 1891-1900.	Brighton. 1891-1900.	Glasgow. 1881-1890.
0.....	0·8821140	0·85963	0·84569	0·8589370	0·85318
5.....	0·9932241	0·99312	0·99127	0·9951877	0·98511
10.....	0·9963842	0·99763	0·99757	0·9978425	0·99497
15.....	0·9953468	0·99683	0·99721	0·9978245	0·99370
20.....	0·9943377	0·99566	0·99682	0·9974127	0·99180
25.....	0·9934518	0·99511	0·99597	0·9967650	0·99028
35.....	0·9905929	0·99197	0·99142	0·9937594	0·98788
45.....	0·9881373	0·98833	0·98657	0·9891837	0·98293
55.....	0·9789915	0·97938	0·97673	0·9819252	0·97085
65.....	0·9567557	0·95814	0·95562	0·9650290	0·94646
75.....	0·9147546	0·90676	0·90371	0·9190734	0·90403

In each of the above tables the probability of living a year at birth is lower than at any of the succeeding ages quoted. The first point to arrest attention, however, is the value expressing the probability of living a year at birth both for males and females in Scotland, as compared with England and Wales, London, Brighton, and Glasgow. The question arises as to the reason of the high probability in Scotland as a whole. Now, the ruling factor in fixing the probability for any year is the death-rate of that year, a high mortality causing a low probability, and, conversely, a low mortality a high probability. An inquiry into the infantile mortality of Scotland for the ten years 1891-1900 showed that the figures for the total infantile births and deaths for that period were as follows:—

Registered births in Scotland during 1891-1900—

Males ..... 655,561

Females ..... 624,483

Total ..... 1,280,044

Infantile deaths in Scotland during 1891-1900—

Males .....	91,802
Females .....	71,960
Total .....	<u>163,762</u>

.. Infantile mortality in Scotland, 1891-1900 =

Males .....	140.08 per 1,000 registered male births.
Females .....	115.23 " " female "

.. General infantile mortality in Scotland, 1891-1900 = 127.93 per 1,000 registered male and female births.

The figures for England and Wales were found to be as follows:—

Registered births in England and Wales during 1891-1900—

Males .....	4,657,846
Females .....	4,497,865
Total .....	<u>9,155,711</u>

Infantile deaths in England and Wales during 1891-1900—

Males .....	781,475
Females .....	622,244
Total .....	<u>1,403,719</u>

.. Infantile mortality in England and Wales, 1891-1900 =

Males .....	167.77 per 1,000 registered male births.
Females .....	138.35 " " female "

.. General infantile mortality in England and Wales, 1891-1900 = 153.32 per 1,000 registered male and female births.

It will be seen from the above that the male infantile mortality in England and Wales for the decennium 1891-1900 was 27.74 per 1,000 registered male births higher, and the female infantile mortality 23.12 per 1,000 registered female births higher, than in Scotland. The general infantile mortality in England and Wales for the decennium was 25.39 per 1,000 registered male and female births higher than in Scotland.

The following shows the great importance of the comparatively low infantile mortality in Scotland:—

196,250 = number of infantile deaths that would have occurred in Scotland in 1891-1900, if the same rate had held as in England.

163,762 = actual number of infantile deaths in Scotland, 1891-1900.

.. 32,494 = number of infantile lives saved in Scotland as compared with England, 1891-1900.

.. 3,249.4 = mean annual number saved during the first year of life.

Again,

1,403,719 = actual number of infantile deaths in England, 1891-1900.

1,171,226 = number to which infantile deaths would have been reduced in England, 1891-1900, if the same infantile death-rate had held as in Scotland.

∴ 232,493 = number of infantile lives that would have been saved in England, 1891-1900, if the same rate had held as in Scotland.

∴ 23,249·3 = mean annual excess of infantile deaths in England as compared with Scotland.

The above comparison is exceedingly favourable to Scotland, and the causes tending to produce such a pronounced difference are worthy of careful study. It is well known that a large proportion of the death-rate during the first year of life is due to infantile diarrhoea, which again is greatly increased by high temperatures and deficient rainfall extending over a period. Whether it is due to conditions without the control of the people, such as temperature, rainfall, &c., or to conditions within their control, such as feeding, housing, sanitation generally, &c., would afford interesting study, but consideration of the question cannot be undertaken here.

In the detailed report of the Registrar-General for Scotland in 1873 is contained a life-table by W. Robertson, M.D., based on the census enumeration of 1871, and on the registered deaths of that year. The 1871 table is also remarkable for the very high probability at birth of living a year, both for males and females; the probability for males being very slightly higher than in the present table, and that for females slightly lower. This result is borne out by the infantile mortality of 1871, the male infantile mortality of that year being about 1 per 1,000 less, and the female about 5·6 per 1,000 more, than in 1891-1900. Scotland then by comparison has enjoyed a favourable infantile mortality, and the decennium 1891-1900 has not been exceptional.

On comparing the probability at birth with succeeding probabilities it can be seen how low it is even for Scotland. A child's hold upon life during its first year, and especially during the earlier months of that year, is very feeble. By the time the child has reached the end of its first year, its hold has greatly strengthened, and its chance of living a year gradually increases with each year of age until it reaches 11 years, when its maximum vitality is reached. This is true also of England and Wales, London and Glasgow, but it does not appear to be universally so, as the second Brighton Life-Table gives the highest probability for males at 12 years of age, and for females at 18.

The present Life-Table shows a general decline in the  $p_x$  values after  $p_{11}$ , a decline which might be said to be steady, were it not that after  $p_{24}$  in males there is a slight rise to  $p_{26}$ , from which point the values steadily decrease. The irregularity in the  $p_x$  values for males in Scotland has been investigated, and the results will be published later.

If the probability of living a year of a man of 81 years of age be compared with that of a male at birth in Scotland, it is seen that the former's chances are slightly greater. In the same way, if the chances of a woman of 79 and of a female at birth be compared, the odds are seen to be slightly in favour of the woman. The  $p_x$  values for females in Scotland are as a rule slightly higher than for males, the following being the exceptions,  $p_3$  to  $p_{16}$  and  $p_{28}$  to  $p_{35}$ . For the present it is sufficient to say that these exceptions are possibly due to the difference in the age-incidence of phthisis and other tuberculous diseases in males and females. The probability at birth, then, both for males and females in Scotland has been shown in the foregoing table to be higher than in England, London, Brighton, or Glasgow. Of the ages quoted, the probability is lower in Scotland than in England at 5, 10, 15, 20, 25, 35 and 55 years for males, and for females in Scotland the probability is lower than in England at ages 10, 15, 20, 25, 35, 45, 55 and 65 years.

So far as the probability of life at birth is concerned, London is lowest of the group, but presents higher probabilities than even England at ages 10, 15, 20 and 25 years for males, and at ages 15, 20, and 25 for females.

Brighton justifies its character as a health resort, the probabilities being higher than in Scotland at all the ages quoted, with the exception of "at birth."

The probabilities of Glasgow at all the ages quoted are lower than those of Scotland as a whole, and this is what might be expected from a large manufacturing centre.

A comparison of the probabilities of life in the Life-Table of 1891-1900 with those in the Life-Table of 1871 shows that the present probabilities are higher from  $p_1$  to  $p_{52}$  for males, and from  $p_0$  to  $p_{51}$  for females. Thereafter the values are slightly lower by the present Life-Table. In making any deductions from Dr. Robertson's table, however, it must be remembered that the basis on which it was constructed is very narrow, being in fact the figures of one year, which may have been exceptional. Farr himself was dissatisfied with his English Life-Table No. 1, because it was founded on the census returns and deaths of only one year, viz., 1841. He therefore proceeded to calculate his English Life-Table No. 2 on the census returns of 1831 and 1841, and the deaths of seven years 1838-1844.

### *The Number of Survivors.*

The second point for consideration is the number of survivors at the end of each year of life out of a given number born. It is wholly dependent on the conditions affecting the past, the number of survivors being greater or fewer, in proportion as the conditions had been more or less favourable.

In Table V appended will be seen the number of survivors at each year of age out of 1,000,000 males and 1,000,000 females born in Scotland.

In the following Table 8 the survivors at various ages in

Scotland, 1891-1900, are compared with those of England and Wales, London, and Brighton for the same decennium, and of Glasgow, 1881-1890.

TABLE 8.—*Survivors at Various Ages out of 100,000 Born.*

MALES.

Age.	Scotland. 1891-1900.	England and Wales. 1891-1900.	London. 1891-1900.	Brighton. 1891-1900.	Glasgow. 1881-1890.
0 .....	100,000	100,000	100,000	100,000	100,000
1 .....	85,656	82,861	81,588	83,194	82,531
2 .....	81,128	78,467	76,229	79,212	74,044
3 .....	79,332	76,836	74,123	77,503	70,422
4 .....	78,281	75,826	72,793	76,472	68,231
5 .....	77,550	75,093	71,898	75,790	66,870
10 .....	75,675	73,524	70,152	74,550	63,550
15 .....	74,481	72,631	69,295	73,785	61,799
25 .....	70,127	69,502	66,554	70,551	57,288
35 .....	64,895	64,895	61,742	65,732	52,148
45 .....	57,822	57,807	53,471	58,260	44,653
55 .....	47,637	47,547	42,223	47,535	34,061
65 .....	33,033	33,281	27,764	33,836	21,211
75 .....	16,091	15,778	12,198	17,655	8,711

FEMALES.

0 .....	100,000	100,000	100,000	100,000	100,000
1 .....	88,211	85,963	84,569	85,894	85,318
2 .....	83,776	81,717	79,415	81,775	77,188
3 .....	81,943	80,074	77,269	80,148	73,566
4 .....	80,842	79,008	75,888	79,173	71,424
5 .....	80,058	78,255	74,936	78,656	69,992
10 .....	77,995	76,613	73,049	77,272	66,865
15 .....	76,600	75,661	72,150	76,272	65,109
25 .....	72,426	72,591	69,875	74,273	60,108
35 .....	66,917	68,272	65,944	71,045	53,802
45 .....	60,275	62,063	59,195	65,449	46,597
55 .....	51,647	53,297	49,721	56,984	37,441
65 .....	38,341	39,897	36,172	44,767	25,156
75 .....	20,900	21,084	18,592	25,837	12,074

The males reaching 1 year of age in Scotland out of 100,000 born exceed those in England by 2,795. This gives Scotland an advantage, which is slowly lessened, until at age 35 the numbers surviving in both Scotland and England are exactly the same, viz., 64,895 males. Very much the same can be said with regard to the female survivors in Scotland and England. The advantages here which Scotland gets in the first year is 2,248, but this has disappeared before the end of the 25th year, when the female survivors in England slightly exceed those in Scotland. Investigation into the cause of this gradual approximation of the numbers of male and female survivors in the two countries has shown that it is probably due to an excessive death-rate in Scotland from phthisis and other tuberculous diseases, as compared with England.

From age 35 onwards in males the difference in the number of survivors at each age in Scotland and England is remarkably small, the difference in the female survivors at these ages being a little more. In Scotland one half of the males are dead before reaching the 54th year, and one half of the females before reaching the 57th year.

London has fewer survivors at every age, both for males and females, while Brighton has fewer in the earlier years, the deficiency being mostly due to its greater infantile mortality, but from the 25th year the male survivors in Brighton at each age exceed those in Scotland, and from the 17th year the Brighton female survivors exceed those in Scotland.

Glasgow has a smaller number of survivors at every age than Scotland as a whole. As might be expected, it compares unfavourably. A Life-Table for Glasgow, however, constructed on the figures of 1891-1900 would most probably show marked improvement, as the death-rate in Glasgow for 1891-1900 was 21.528 per 1,000, as compared with 24.220 per 1,000 in 1881-90.

Dr. Robertson's table begins with 513,950 males and 486,050 females in 1,000,000 at birth. That is to say, for every 1,000 female births in 1871 there were 1,057 male births.

The present table begins with 512,139 males and 487,861 females in 1,000,000 at birth. For every 1,000 female births, therefore, in 1891-1900 there were 1,049 male births.

Although there are more males at the beginning of the 1871 table, the survivors at all ages from 2 years onwards to 89 are greater by the 1891-1900 table.

The females are slightly less at the beginning of the 1871 table, but this disparity in the number of survivors is increased at almost all ages in favour of the present table.

It has been pointed out that the probabilities of life for males from  $p_{53}$ , and for females from  $p_{52}$ , onwards are slightly greater by the 1871 table, which should mean of course that the death-rate of the year 1871 was lower, from age 52 in females and 53 in males, than the death-rate of the ten years 1891-1900. That the number of survivors in the present table is greater at practically all ages, is due to the fact that the number saved up to 52 years of age in females and 53 in males, is so very much greater than in the 1871 table, that the people of Scotland can now support a slightly heavier death-rate after these ages, and still have even at the higher ages a preponderance of survivors.

### *The Mean after Lifetime or Expectation of Life.*

The third point (*i.e.*) the mean after-lifetime, depends upon the aggregate number of years lived by a population entering on any age, at and after that age, and expresses the average number of years lived from that age by the members of the population. Its duration may be taken as a measure of the conditions, as to their being favourable or unfavourable, under which the people have been living during the years following any age. If the conditions

are unfavourable, the death-rate is increased and the expectation of life is lowered. The best illustration of this is afforded during the first year of life. For example, in Scotland the Life-Table begins with 512,139 male children at birth. The aggregate number of years lived by these is 22,896,752. Therefore the mean after-life-time at birth =  $\frac{22,896,752}{512,139} = 44\cdot71$  years for males.

Now, in the first year of life the death-rate is very high, so that the number beginning the second year is 438,681 males. The grand total of years lived from the beginning of the second year onwards is 22,434,673, and this number has to be divided equally among the 438,681 males. Therefore the mean after-lifetime for males entering on the second year =  $\frac{22,434,673}{438,681} = 51\cdot14$  years.

Comparing the fraction  $\frac{22,896,752}{512,139}$  with  $\frac{22,434,673}{438,681}$  it is seen that the denominator of the second as compared with that of the first is proportionately much more reduced than is the numerator of the second as compared with that of the first. Thus the quotient is greater in the second case. The expectation of life at birth is therefore lowered by the excessive infantile mortality, but, as this unfavourable period passes, the expectation of life goes on increasing until it reaches a maximum at 3 years of age, when for males it is 53·16 years, and for females 54·75 years. In both cases after the value  $E_3$  it steadily declines, keeping higher, however, for females at all ages than for males.

The expectation of life at each age in Scotland for males and females is shown in column  $E_x$  of Tables III and IV appended.

In the following table is given the expectation of life at different ages in Scotland, England and Wales, London, Brighton, and Glasgow :—

TABLE 9.—*Expectation of Life.*

## MALES.

Age.	Scotland. 1891-1900.	England and Wales. 1891-1900.	London. 1891-1900.	Brighton. 1891-1900.	Glasgow. 1881-1890.
0.....	44·71	44·17	40·98	44·92	35·18
5.....	52·86	53·50	51·60	53·94	46·97
10.....	48·60	49·60	47·84	49·80	44·32
15.....	44·34	45·18	43·40	45·29	40·51
20.....	40·43	41·01	39·13	41·09	36·90
25.....	36·75	36·97	34·96	37·12	33·29
35.....	29·30	29·22	27·25	29·45	26·06
45.....	22·24	22·15	20·65	22·54	19·54
55.....	15·85	15·78	14·76	16·44	13·99
65.....	10·57	10·30	9·76	11·01	9·38
75.....	6·38	6·13	5·91	6·44	5·96
85.....	3·88	3·49	3·48	3·01	3·75

TABLE 9 *Contd.*—*Expectation of Life.*

## FEMALES.

	Scotland. 1891-1900.	England and Wales. 1891-1900.	London. 1891-1900.	Brighton. 1891-1900.	Glasgow. 1881-1890.
0.....	47·47	47·82	45·33	50·19	37·70
5.....	54·02	55·82	55·12	58·52	48·27
10.....	50·39	51·97	51·49	54·53	45·44
15.....	46·26	47·59	47·10	50·21	41·59
20.....	42·41	43·44	42·77	45·82	38·00
25.....	38·63	39·38	38·46	41·42	34·60
35.....	31·37	31·53	30·42	33·06	28·06
45.....	24·27	24·16	23·29	25·42	21·61
55.....	17·42	17·26	16·72	18·41	15·60
65.....	11·60	11·26	11·01	11·98	10·69
75.....	7·05	6·70	6·57	6·91	6·97
85.....	3·75	3·79	3·79	3·36	4·32

The expectation of life of males at birth in Scotland exceeds that of England by 0·54 of a year. Of the other ages quoted England has a greater expectation of life at ages 5, 10, 15, 20, 25, and 85. In Scotland, however, the total number of years lived at and above each of these ages is greater than in England, so that the lower expectation of life in Scotland at these ages is greatly due to a larger number of survivors, among whom the aggregate number of years lived has to be divided. It has already been pointed out how a high mortality during any year lowers the expectation of life for the beginning of that year.

The expectation of life of males in London is lower at all the ages except at the age of 85. In Brighton, on the other hand, it is higher at all the ages except at 85. Glasgow shows the lowest value at all the ages except at 85, at which age the expectation of life in Glasgow for both males and females is higher than in any of the places quoted.

The expectation of life of females in England is higher on to age 35, and again at 85. From 45 to 75 Scotland has the higher values. Again, the lower values in Scotland at the early ages are greatly due to a larger number of survivors.

As a large city, London compares very favourably with Scotland in the expectation of life among its females at the different ages, while Brighton has higher values than Scotland for the expectation of life of females at all the ages mentioned except at 75 and 85.

In Glasgow the expectation of females is very low as compared with the other places, except at age 85.

From the above tables it will be seen that the general rule is that at all ages females enjoy a higher expectation of life than males.

Figs. III and IV graphically represent the expectation of life for males and females in Scotland at the different ages both for the Life-Table of 1871 and that of 1891-1900, the years of age being represented along the base line, and the expectations at the different ages being represented by the height of the ordinates. This vividly demonstrates the immense advantage which the present enjoys over



the past. The expectation of life at birth by Dr. Robertson's table is for males 39·79 years, and for females 42·05 years. The corresponding figures in the table of 1891-1900 are 44·71 for males and 47·47 for females. That is to say, males now have on an average 4·92 years, and females 5·42 years, more of life than by the table of 1871.

Up to 43 years of age the expectation of life for males is greater at every age by the present table than by Dr. Robertson's—at 44 the expectations exactly coincide, being 22·92 years. From 45 onwards in males the old table presents slightly higher values for expectation of life.

Females by the present table have a higher expectation of life than by the old up to 41 years of age—at 42 the values practically coincide. Thereafter the females in the old table have a very slightly higher expectation of life at each age.

It should be noted at this point, however, that both for males and females in the present table the number of years lived in and above each year of age, viz.,  $Q_x$ , is greater at every age than by the 1871 table, and if in the higher ages the expectation of life, viz.,  $E_x$ , is greater by the old than by the new table, this is greatly due to a larger number of survivors,  $l_x$ , at all ages in the new table. To still further explain this point:—

$$E_x = \frac{Q_x}{l_x}$$

Now  $Q_x$  at all ages by the new table is much increased, but  $l_x$  is also much increased at all ages by the new table, and at the higher ages is proportionately more increased than  $Q_x$ . Therefore the values of  $E_x$  at the higher ages in the new table are lessened.

The English Life-Tables present a very similar case. It was found that the 1881-90 table for England showed higher expectations than the 1871-80 table up to 44 years, after which the latter had slightly higher values.

Dr. Hayward, however, showed that, when the figures of 1871-80, 1881-90, and 1891-1900 were calculated by strictly comparable methods, the expectations of life even at the higher ages in 1881-90, and more so in 1891-1900, were more favourable than in 1871-80.

If a strict investigation were instituted into the figures of 1871 and those of 1891-1900 for Scotland, a like result would in all probability be arrived at.

In so far then as a Life-Table with such a basis can be accepted as reliable, that of 1871 may be taken as a measure of the vitality of the people of Scotland before the Public Health Acts had produced their effect.

The comparison of the present with the old table bears eloquent testimony to the greatly increased vitality of the people at the present time. Such figures seem wonderful, when it is considered to what an extent the urbanisation of the population of Scotland has gone on since 1871, and they also render it hard to believe that there is any real foundation for the cry about physical degeneration of the race.

FIG. I.

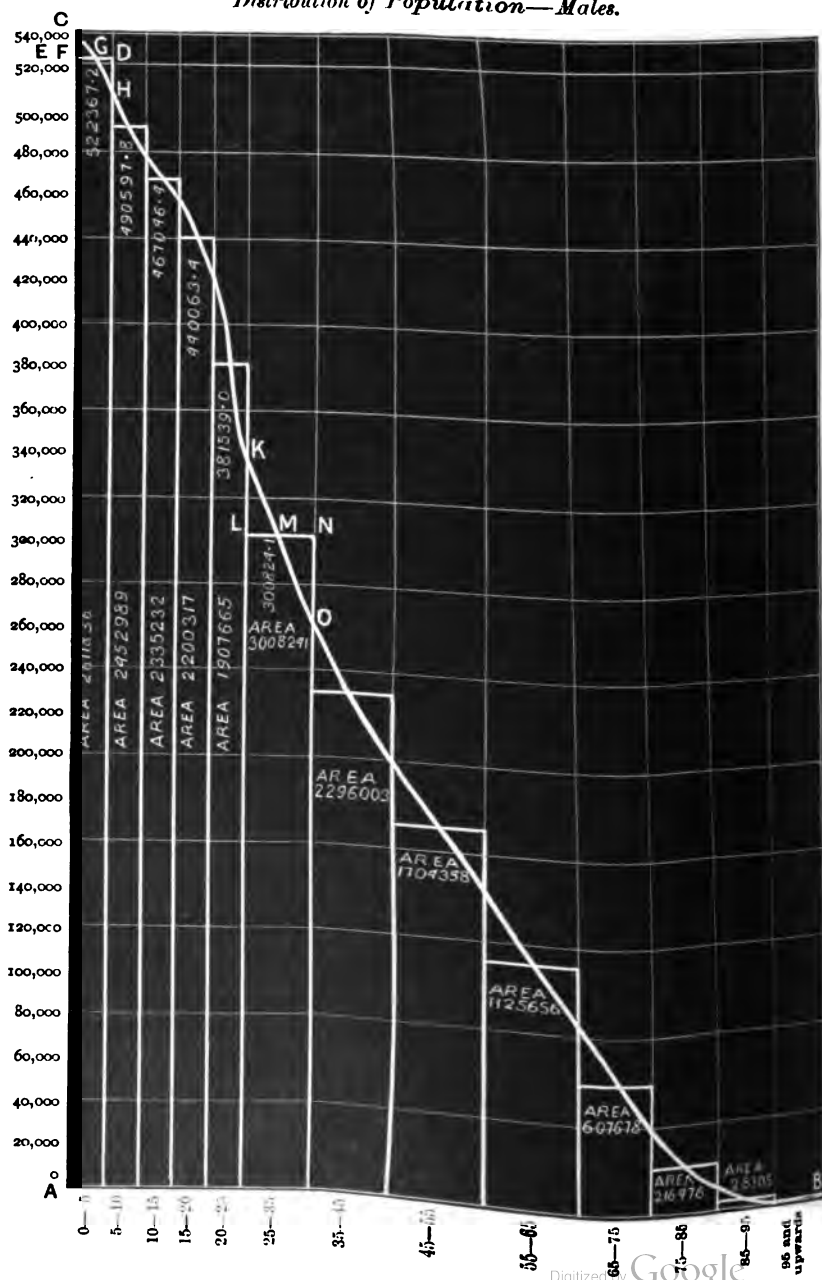
*Distribution of Population—Males.*

FIG. II.

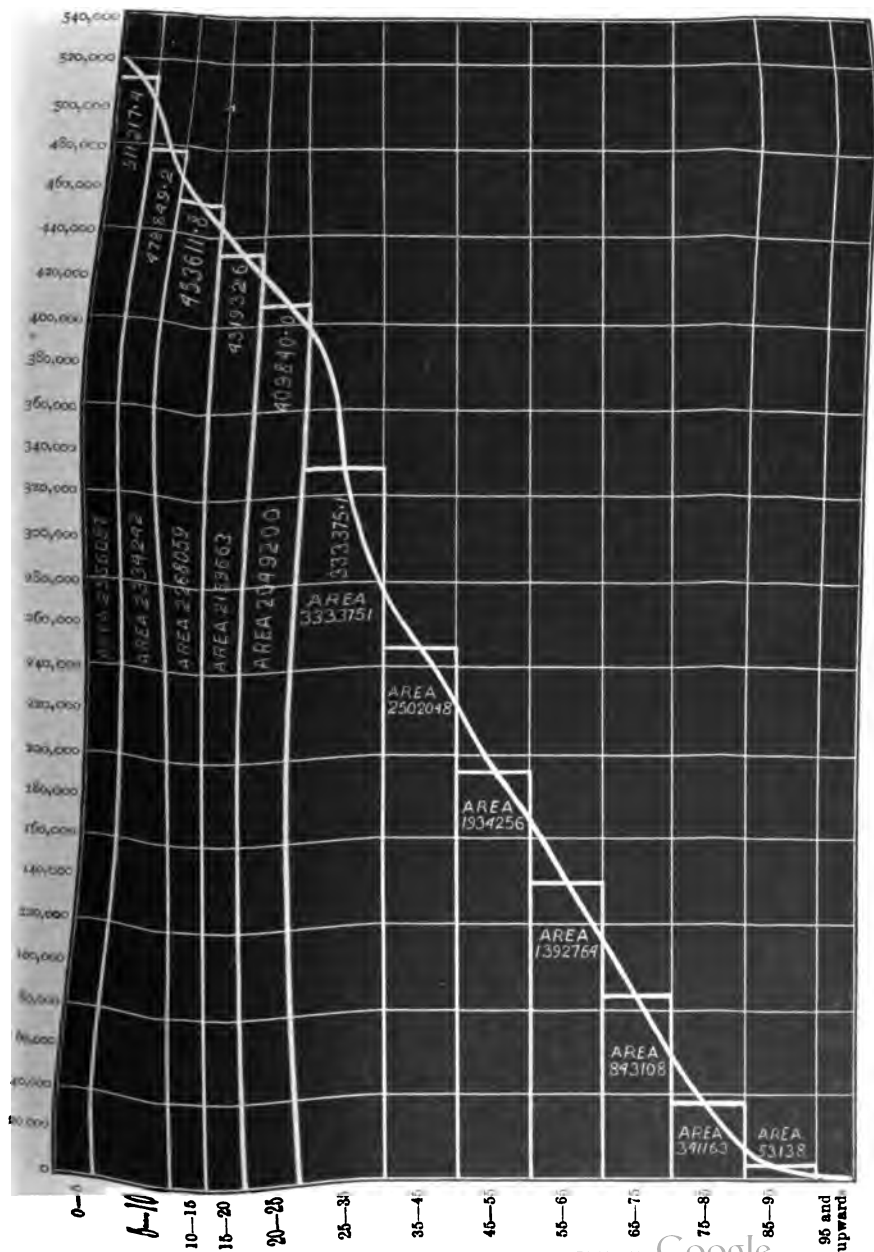
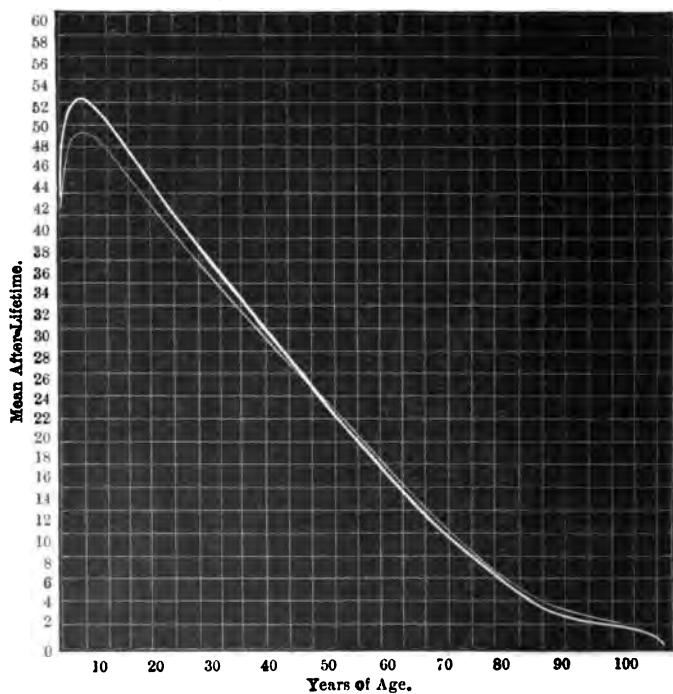
*Distribution of Population—Females.*

FIG. III.

*Mean After-Lifetime (Expectation of Life)—Males, at each Year of Age.*

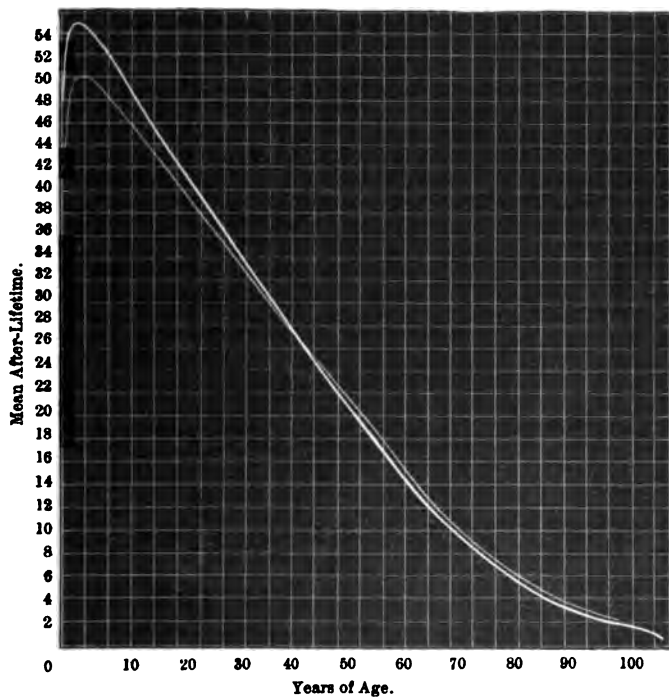


— Life Table for Scotland, 1891-1900.

- - - Life Table for Scotland, 1871.

FIG. IV.

*Mean After-Lifetime (Expectation of Life)—Females, at each Year of Age*



— Life Table for Scotland, 1891-1900.  
- - - Life Table for Scotland, 1871.

TABLE I (Appended).—*Total Number of Lives at Risk and Deaths (1891-1900), Distributed.*

## MALES.

Age.	Years of Life at Risk.		Deaths.	
	In Original Groups.	Distributed.	In Original Groups.	Distributed.
5 .....	2,452,989	503,800	12,053	3,320
6 .....		496,519		2,763
7 .....		489,930		2,340
8 .....		483,625		1,950
9 .....		479,115		1,690
10 .....	2,335,232	474,900	7,425	1,508
11 .....		470,850		1,459
12 .....		467,050		1,448
13 .....		463,450		1,470
14 .....		458,982		1,540
15 .....	2,200,317	453,600	11,341	1,752
16 .....		447,750		2,100
17 .....		440,750		2,404
18 .....		433,400		2,515
19 .....		424,817		2,570
20 .....	1,907,695	415,250	13,061	2,606
21 .....		403,000		2,630
22 .....		383,000		2,638
23 .....		360,445		2,620
24 .....		346,000		2,567
25 .....	3,008,241	336,941	23,203	2,450
26 .....		327,850		2,332
27 .....		319,800		2,290
28 .....		311,900		2,272
29 .....		304,100		2,265
30 .....		296,650		2,270
31 .....		289,300		2,285
32 .....		281,700		2,310
33 .....		274,000		2,345
34 .....		266,000		2,384
35 .....	2,296,003	258,300	26,232	2,424
36 .....		251,760		2,466
37 .....		245,200		2,509
38 .....		238,700		2,552
39 .....		232,250		2,596
40 .....		226,053		2,641
41 .....		220,000		2,687
42 .....		213,900		2,736
43 .....		207,900		2,785
44 .....		202,000		2,836

TABLE I Contd.—Total Number of Lives at Risk and Deaths, Distributed.

## MALES.

Age.	Years of Life at Risk.		Deaths.	
	In Original Groups.	Distributed.	In Original Groups.	Distributed.
45 .....	1,704,358	196,100	32,432	2,887
46 .....		190,300		2,940
47 .....		184,550		3,000
48 .....		178,850		3,064
49 .....		173,200		3,128
50 .....		167,800		3,208
51 .....		162,200		3,295
52 .....		156,450		3,420
53 .....	1,125,656	150,500	40,251	3,660
54 .....		144,408		3,830
55 .....		138,400		3,920
56 .....		132,600		3,965
57 .....		126,750		3,992
58 .....		120,800		4,010
59 .....		115,100		4,023
60 .....		109,550		4,039
61 .....	607,678	104,100	41,541	4,050
62 .....		98,456		4,067
63 .....		92,800		4,083
64 .....		87,100		4,102
65 .....		81,800		4,123
66 .....		76,928		4,143
67 .....		72,300		4,172
68 .....		67,800		4,188
69 .....	216,477	63,200	29,919	4,200
70 .....		58,500		4,201
71 .....		53,800		4,185
72 .....		49,100		4,168
73 .....		44,450		4,118
74 .....		39,800		4,048
75 .....		35,400		3,950
76 .....		31,800		3,780
77 .....	28,305	28,300	7,918	3,594
78 .....		25,300		3,386
79 .....		22,550		3,150
80 .....		19,830		2,878
81 .....		17,180		2,644
82 .....		14,516		2,404
83 .....		11,900		2,178
84 .....		9,700		1,955
85 .....		7,700		1,710
86 .....		5,850		1,478
87 .....		4,250		1,236
88 .....		3,000		970
89 .....		2,200		744
90 .....		1,700		564
91 .....		1,300		440
92 .....		1,000		332
93 .....		710		256
94 .....		595		188

TABLE II (Appended).—*Total Number of Lives at Risk and Deaths (1891-1900), Distributed.*

## FEMALES.

Age.	Years of Life at Risk.		Deaths.	
	In Original Groups.	Distributed.	In Original Groups.	Distributed.
5 .....	2,394,246	496,400	12,563	3,375
6 .....		488,200		2,875
7 .....		478,146		2,430
8 .....		468,500		2,093
9 .....		468,000		1,790
10 .....	2,268,059	459,650	8,187	1,665
11 .....		456,400		1,614
12 .....		454,000		1,608
13 .....		450,750		1,620
14 .....		447,259		1,680
15 .....	2,159,663	442,750	11,191	2,065
16 .....		437,800		2,212
17 .....		431,900		2,268
18 .....		426,200		2,308
19 .....		421,013		2,338
20 .....	2,049,200	417,200	12,328	2,369
21 .....		413,500		2,407
22 .....		410,000		2,452
23 .....		406,800		2,518
24 .....		402,200		2,582
25 .....	3,333,751	395,300	25,997	2,597
26 .....		387,000		2,598
27 .....		375,000		2,599
28 .....		354,000		2,599
29 .....		333,000		2,600
30 .....		317,850		2,600
31 .....		306,200		2,600
32 .....		296,201		2,601
33 .....		288,000		2,601
34 .....		281,200		2,602
35 .....	2,502,048	275,300	26,046	2,602
36 .....		269,600		2,603
37 .....		264,200		2,604
38 .....		258,800		2,604
39 .....		253,300		2,604
40 .....		247,700		2,605
41 .....		242,000		2,605
42 .....		236,200		2,606
43 .....		230,300		2,606
44 .....		224,648		2,607



TABLE II *Contd.*—Total Number of Lives at Risk and Deaths, Distributed.

## FEMALES.

Age.	Years of Life at Risk.		Deaths.	
	In Original Groups.	Distributed.	In Original Groups.	Distributed.
45	1,934,256	219,300	29,448	2,617
46		213,800		2,646
47		208,056		2,708
48		202,200		2,777
49		196,300		2,871
50		190,300		2,969
51		184,300		3,067
52		178,800		3,168
53		173,400		3,265
54		167,800		3,360
55	1,392,764	162,400	40,519	3,448
56		157,000		3,544
57		152,064		3,642
58		147,100		3,745
59		142,200		3,876
60		137,000		4,045
61		132,000		4,291
62		126,400		4,497
63		121,100		4,615
64		115,600		4,786
65	843,108	110,000	49,174	4,862
66		104,400		4,908
67		98,800		4,926
68		93,100		4,940
69		86,850		4,947
70		81,100		4,949
71		75,400		4,946
72		69,900		4,926
73		64,350		4,902
74		59,208		4,868
75	341,163	54,200	41,286	4,826
76		49,400		4,772
77		44,700		4,696
78		40,000		4,568
79		35,400		4,396
80		31,300		4,186
81		27,300		3,920
82		23,400		3,638
83		19,600		3,320
84		15,863		2,964
85	53,138	13,000	13,493	2,654
86		10,300		2,326
87		8,000		1,997
88		6,300		1,720
89		4,800		1,420
90		3,800		1,120
91		2,850		849
92		2,000		614
93		1,300		450
94		788		343

TABLE III (Appended).—LIFE-TABLE FOR SCOTLAND. *Based on the Mortality in the Ten Years 1891-1900.*

## MALES.

Age.	Dying in Each Year of Age.	Born, and Surviving at Each Age.	Population, or Years of Life Lived, in Each Year of Age.	Population, or Years of Life Lived, in and above Each Year of Age.	Expectation of Life at Each Age.
<i>s.</i>	<i>d.</i>	<i>l.</i>	<i>P.</i>	<i>Q.</i>	<i>E.</i>
0 .....	73,458	512,139	462,079	22,896,752	44.71
1 .....	23,192	438,681	427,085	22,434,673	51.14
2 .....	9,197	415,489	410,890	22,007,588	52.97
3 .....	5,881	406,292	403,602	21,596,693	53.16
4 .....	3,745	400,911	399,088	21,193,096	52.86
5 .....	2,609	397,166	395,862	20,794,058	52.36
6 .....	2,190	394,557	393,462	20,398,196	51.70
7 .....	1,870	392,367	391,432	20,004,734	50.98
8 .....	1,571	390,497	389,711	19,613,302	50.23
9 .....	1,361	388,926	388,246	19,223,591	49.43
10 .....	1,229	387,565	386,950	18,835,345	48.60
11 .....	1,195	386,336	385,739	18,449,395	47.75
12 .....	1,192	385,141	384,545	18,062,656	46.90
13 .....	1,216	383,949	383,341	17,678,111	46.04
14 .....	1,282	382,733	382,092	17,294,770	45.19
15 .....	1,470	381,451	380,716	16,912,678	44.34
16 .....	1,778	379,981	379,092	16,531,962	43.51
17 .....	2,057	378,203	377,174	16,152,870	42.71
18 .....	2,176	376,146	375,058	15,775,696	41.94
19 .....	2,256	373,970	372,842	15,400,638	41.18
20 .....	2,325	371,714	370,552	15,027,796	40.43
21 .....	2,403	369,389	368,187	14,657,244	39.68
22 .....	2,519	366,986	365,727	14,289,057	38.94
23 .....	2,640	364,467	363,147	13,923,330	38.20
24 .....	2,675	361,827	360,489	13,560,183	37.48
25 .....	2,602	359,152	357,851	13,199,694	36.75
26 .....	2,527	356,550	355,287	12,841,843	36.02
27 .....	2,526	354,023	352,760	12,486,556	35.27
28 .....	2,551	351,497	350,221	12,133,796	34.52
29 .....	2,589	348,946	347,652	11,783,575	33.77
30 .....	2,640	346,357	345,037	11,435,923	33.02
31 .....	2,704	343,717	342,365	11,090,866	32.27
32 .....	2,785	341,013	339,620	10,748,521	31.52
33 .....	2,882	338,228	336,787	10,408,901	30.77
34 .....	2,992	335,346	333,850	10,072,114	30.03
35 .....	3,104	332,354	330,802	9,738,264	29.30
36 .....	3,210	329,250	327,645	9,407,462	28.57
37 .....	3,319	326,040	324,381	9,079,817	27.85
38 .....	3,432	322,721	321,005	8,755,436	27.13
39 .....	3,540	319,289	317,514	8,434,431	26.42

TABLE III *Contd.*—Based on the Mortality in the Ten Years 1891-1900.

## MALES.

Age.	Dying in Each Year of Age.	Born, and Surviving at Each Age.	Population, or Years of Life Lived, in Each Year of Age. $P_x$	Population, or Years of Life Lived, in and above Each Year of Age. $Q_x$	Expectation of Life at Each Age. $E_x$
$x$ .	$d_x$ .	$l_x$ .			
40 .....	3,667	315,740	313,937	8,116,917	25·71
41 .....	3,788	312,073	310,179	7,803,010	25·00
42 .....	3,918	308,285	306,326	7,492,831	24·30
43 .....	4,050	304,367	302,342	7,186,505	23·61
44 .....	4,187	300,317	298,223	6,884,163	22·92
45 .....	4,328	296,180	293,966	6,585,940	22·24
46 .....	4,474	291,802	289,565	6,291,974	21·56
47 .....	4,633	287,328	285,012	6,002,409	20·89
48 .....	4,802	282,695	280,294	5,717,397	20·22
49 .....	4,974	277,893	275,406	5,437,103	19·56
50 .....	5,168	272,919	270,335	5,161,697	18·91
51 .....	5,385	267,751	265,058	4,891,362	18·27
52 .....	5,673	262,366	259,530	4,626,304	17·63
53 .....	6,168	256,693	253,609	4,366,774	17·01
54 .....	6,557	250,525	247,246	4,113,165	16·42
55 .....	6,814	243,968	240,561	3,865,919	15·85
56 .....	6,987	237,154	233,661	3,625,358	15·29
57 .....	7,137	230,167	226,598	3,391,697	14·74
58 .....	7,283	223,030	219,389	3,165,099	14·19
59 .....	7,411	215,747	212,041	2,945,710	13·65
60 .....	7,542	208,336	204,565	2,733,669	13·12
61 .....	7,663	200,794	196,963	2,529,104	12·60
62 .....	7,816	193,131	189,223	2,332,141	12·08
63 .....	7,978	185,315	181,326	2,142,918	11·56
64 .....	8,160	177,337	173,257	1,961,592	11·06
65 .....	8,317	169,177	165,018	1,788,335	10·57
66 .....	8,446	160,880	156,637	1,623,317	10·09
67 .....	8,548	152,414	148,140	1,466,680	9·62
68 .....	8,620	143,866	139,556	1,318,540	9·17
69 .....	8,699	135,246	130,897	1,178,984	8·72
70 .....	8,773	126,547	122,160	1,048,087	8·28
71 .....	8,818	117,774	113,365	925,927	7·86
72 .....	8,852	108,956	104,530	812,562	7·46
73 .....	8,863	100,104	95,673	708,032	7·07
74 .....	8,831	91,241	86,825	612,359	6·71
75 .....	8,710	82,410	78,055	525,534	6·38
76 .....	8,269	73,700	69,566	447,479	6·07
77 .....	7,813	65,431	61,524	377,913	5·78
78 .....	7,228	57,618	54,004	316,389	5·49
79 .....	6,579	50,390	47,101	262,385	5·21

TABLE III *Contd.*—Based on the Mortality in the Ten Years 1891-1900.

## MALES.

Age.	Dying in Each Year of Age.	Born, and Surviving at Each Age.	Population, or Years of Life Lived, in Each Year of Age.	Population, or Years of Life Lived, in and above Each Year of Age.	Expectation of Life at Each Age
x.	d <sub>x</sub> .	l <sub>x</sub> .	P <sub>x</sub> .	Q <sub>x</sub> .	E <sub>x</sub> .
80.....	5,928	43,811	40,847	215,284	4.91
81.....	5,414	37,883	35,176	174,437	4.60
82.....	4,966	32,469	29,986	138,261	4.29
83.....	4,612	27,503	25,197	109,275	3.97
84.....	4,191	22,891	20,795	84,078	3.67
85.....	3,738	18,700	16,831	68,283	3.38
86.....	3,356	14,962	13,284	46,452	3.10
87.....	2,947	11,606	10,133	33,168	2.86
88.....	2,414	8,659	7,452	23,035	2.66
89.....	1,872	6,245	5,309	15,583	2.50
90.....	1,392	4,373	3,677	10,274	2.35
91.....	1,006	2,981	2,478	6,597	2.21
92.....	710	1,975	1,620	4,119	2.09
93.....	479	1,265	1,025	2,499	1.98
94.....	312	786	630	1,474	1.88
95.....	197	474	376	844	1.78
96.....	120	277	217	468	1.69
97.....	72	157	121	251	1.60
98.....	40	85	65	130	1.53
99.....	22	45	34	65	1.44
100.....	12	23	17	31	1.35
101.....	6	11	8	14	1.27
102.....	3	5	3	6	1.14
103.....	1	2	2	2	0.93
104.....	—	1	1	1	0.50
105.....	—	—	—	—	—
106.....	—	—	—	—	—

TABLE IV (Appended).—LIFE-TABLE FOR SCOTLAND. *Based on the Mortality in the Ten Years 1891-1900.*

## FEMALES.

Age. x.	Dying in Each Year of Age. d <sub>x</sub> .	Born, and Surviving at Each Age. l <sub>x</sub> .	Population, or Years of Life Lived, in Each Year of Age. P <sub>x</sub> .	Population, or Years of Life Lived, in and above Each Year of Age. Q <sub>x</sub> .	Expectation of Life at Each Age. E <sub>x</sub> .
0	57,512	487,861	449,695	23,160,931	47·47
1	21,635	430,349	419,531	22,711,236	52·77
2	8,944	408,714	404,242	22,291,705	54·54
3	5,372	399,770	397,084	21,887,463	54·75
4	3,825	394,398	392,486	21,490,379	54·49
5	2,646	390,573	389,250	21,097,893	54·02
6	2,278	387,927	386,788	20,708,643	53·38
7	1,955	385,649	384,671	20,321,855	52·70
8	1,710	383,694	382,839	19,937,184	51·96
9	1,474	381,984	381,247	19,554,345	51·19
10	1,376	380,510	379,822	19,173,098	50·39
11	1,338	379,134	378,465	18,793,276	49·57
12	1,336	377,796	377,128	18,414,811	48·74
13	1,351	376,460	375,785	18,037,683	47·91
14	1,406	375,109	374,406	17,661,898	47·08
15	1,739	373,703	372,833	17,287,492	46·26
16	1,875	371,964	371,027	16,914,659	45·47
17	1,988	370,089	369,120	16,543,632	44·70
18	1,988	368,151	367,157	16,174,512	43·93
19	2,028	366,163	365,149	15,807,355	43·17
20	2,062	364,135	363,104	15,442,206	42·41
21	2,102	362,073	361,022	15,079,102	41·65
22	2,146	359,971	358,898	14,718,080	40·89
23	2,211	357,825	356,719	14,359,182	40·13
24	2,276	355,614	354,476	14,002,463	39·38
25	2,314	353,338	352,181	13,647,987	38·63
26	2,349	351,024	349,850	13,295,806	37·88
27	2,408	348,675	347,471	12,945,956	37·13
28	2,533	346,267	345,000	12,598,485	36·38
29	2,673	343,734	342,398	12,253,485	35·65
30	2,778	341,061	339,672	11,911,087	34·92
31	2,860	338,283	336,853	11,571,415	34·21
32	2,933	335,423	333,956	11,234,562	33·49
33	2,989	332,490	330,996	10,900,606	32·78
34	3,035	329,501	327,983	10,569,610	32·08
35	3,071	326,466	324,981	10,241,627	31·37
36	3,107	323,395	321,841	9,916,696	30·66
37	3,141	320,288	318,718	9,594,855	29·96
38	3,175	317,147	315,559	9,276,137	29·25
39	3,211	313,972	312,367	8,960,578	28·54

TABLE IV *Contd.*—Based on the Mortality in the Ten Years 1891-1900.

## FEMALES.

Age. <i>x.</i>	Dying in Each Year of Age. <i>d<sub>x</sub></i>	Born, and Surviving at Each Age. <i>l<sub>x</sub></i>	Population, or Years of Life Lived, in Each Year of Age. <i>P<sub>x</sub></i>	Population, or Years of Life Lived, in and above Each Year of Age. <i>Q<sub>x</sub></i>	Expectation of Life at Each Age. <i>E<sub>x</sub></i>
40 .....	3,251	310,761	309,135	8,648,211	27·83
41 .....	3,292	307,510	305,864	8,339,076	27·12
42 .....	3,338	304,218	302,549	8,033,212	26·41
43 .....	3,386	300,880	299,187	7,730,663	25·69
44 .....	3,432	297,494	295,778	7,431,476	24·98
45 .....	3,488	294,062	292,318	7,135,698	24·27
46 .....	3,574	290,574	288,787	6,843,380	23·55
47 .....	3,711	287,000	285,145	6,554,593	22·84
48 .....	3,864	283,289	281,357	6,269,448	22·13
49 .....	4,057	279,425	277,396	5,988,091	21·43
50 .....	4,263	275,368	273,237	5,710,695	20·74
51 .....	4,474	271,105	268,863	5,437,458	20·06
52 .....	4,683	266,631	264,289	5,168,590	19·38
53 .....	4,886	261,948	259,505	4,904,301	18·72
54 .....	5,096	257,062	254,514	4,644,796	18·07
55 .....	5,293	251,966	249,320	4,390,222	17·42
56 .....	5,506	246,673	243,920	4,140,962	16·79
57 .....	5,708	241,167	238,313	3,897,042	16·16
58 .....	5,919	235,459	232,499	3,658,729	15·54
59 .....	6,173	229,540	226,454	3,426,230	14·93
60 .....	6,499	223,367	220,117	3,199,776	14·33
61 .....	6,937	216,868	213,400	2,979,659	13·74
62 .....	7,338	209,931	206,262	2,766,259	13·18
63 .....	7,631	202,593	198,777	2,559,997	12·64
64 .....	7,908	194,962	191,008	2,361,220	12·11
65 .....	8,089	187,054	183,010	2,170,212	11·60
66 .....	8,220	178,965	174,855	1,987,202	11·10
67 .....	8,306	170,745	166,592	1,812,347	10·61
68 .....	8,396	162,439	158,241	1,645,755	10·13
69 .....	8,531	154,043	149,777	1,487,514	9·66
70 .....	8,617	145,512	141,204	1,337,737	9·19
71 .....	8,695	136,895	132,547	1,196,533	8·74
72 .....	8,727	128,200	123,837	1,063,986	8·30
73 .....	8,767	117,473	115,089	940,149	7·87
74 .....	8,743	110,706	106,335	825,060	7·45
75 .....	8,692	101,963	97,617	718,725	7·05
76 .....	8,595	93,271	88,973	621,108	6·66
77 .....	8,452	84,676	80,450	532,135	6·28
78 .....	8,235	76,224	72,107	451,685	5·93
79 .....	7,949	67,989	64,014	379,578	5·58

TABLE IV *Contd.*—Based on the Mortality in the Ten Years 1891-1900.

## FEMALES.

Age. <i>x.</i>	Dying in Each Year of Age. <i>d<sub>x</sub>.</i>	Born, and Surviving at Each Age. <i>l<sub>x</sub>.</i>	Population, or Years of Life Lived, in Each Year of Age. <i>P<sub>x</sub>.</i>	Population, or Years of Life Lived, in and above Each Year of Age. <i>Q<sub>x</sub>.</i>	Expectation of Life at Each Age. <i>E<sub>x</sub>.</i>
80 .....	7,526	60,040	56,277	215,564	5.26
81 .....	7,035	52,514	48,997	259,287	4.94
82 .....	6,561	45,479	42,198	210,290	4.62
83 .....	6,078	38,918	35,879	168,092	4.32
84 .....	5,612	32,840	30,084	132,213	4.03
85 .....	5,044	27,228	24,706	102,179	3.75
86 .....	4,501	22,184	19,984	77,473	3.49
87 .....	3,924	17,683	15,721	57,539	3.25
88 .....	3,310	13,759	12,104	41,818	3.04
89 .....	2,712	10,449	9,093	29,714	2.84
90 .....	2,156	7,737	6,659	20,621	2.67
91 .....	1,663	5,531	4,749	13,962	2.50
92 .....	1,244	3,918	3,296	9,213	2.35
93 .....	901	2,674	2,224	5,917	2.21
94 .....	632	1,773	1,457	3,693	2.08
95 .....	431	1,141	925	2,236	1.96
96 .....	284	710	568	1,311	1.85
97 .....	180	426	336	743	1.74
98 .....	109	246	192	407	1.65
99 .....	64	137	105	215	1.57
100 .....	35	73	55	110	1.51
101 .....	19	38	29	55	1.45
102 .....	10	19	14	26	1.37
103 .....	5	9	6	12	1.21
104 .....	2	4	3	6	1.09
105 .....	1	2	2	3	0.90
106 .....	—	1	1	1	0.50
107 .....	—	—	—	—	—

TABLE V (Appended).

Age. x.	The Probability of Living One Year from Each Age. p <sub>x</sub> .		Of 1,000,000 Born of each Sex, the Number Surviving at Each Age.	
	Males.	Females.	Males.	Females.
0 .....	0.8565670	0.8821140	1,000,000	1,000,000
1 .....	0.9471315	0.9497273	856,567	882,114
2 .....	0.9778636	0.9781168	811,232	837,768
3 .....	0.9867563	0.9865614	793,323	819,435
4 .....	0.9906591	0.9903023	782,816	808,423
5 .....	0.9934317	0.9932241	775,504	800,583
6 .....	0.9944507	0.9941283	770,410	795,158
7 .....	0.9952352	0.9949308	766,134	790,489
8 .....	0.9959761	0.9955423	762,483	786,482
9 .....	0.9964997	0.9961414	759,415	782,976
10 .....	0.9968296	0.9963842	756,757	779,955
11 .....	0.9969061	0.9964699	754,358	777,135
12 .....	0.9969045	0.9964644	752,024	774,392
13 .....	0.9968332	0.9964124	749,696	771,654
14 .....	0.9966503	0.9962508	747,322	768,896
15 .....	0.9961450	0.9953468	744,819	766,003
16 .....	0.9953209	0.9949602	741,943	762,439
17 .....	0.9945605	0.9947625	738,476	758,596
18 .....	0.9942138	0.9945993	734,460	754,623
19 .....	0.9939686	0.9944621	730,211	750,548
20 .....	0.9937439	0.9943377	725,807	746,391
21 .....	0.9934952	0.9941959	721,267	742,165
22 .....	0.9931359	0.9940373	716,575	737,857
23 .....	0.9927575	0.9938218	711,656	733,457
24 .....	0.9926083	0.9936008	706,502	728,925
25 .....	0.9927550	0.9934518	701,279	724,260
26 .....	0.9929122	0.9933093	696,198	719,517
27 .....	0.9928648	0.9930933	691,263	714,703
28 .....	0.9927420	0.9926850	686,331	709,766
29 .....	0.9925794	0.9922226	681,351	704,575
30 .....	0.9923771	0.9918534	676,295	699,095
31 .....	0.9921327	0.9915447	671,141	693,400
32 .....	0.9918333	0.9912572	665,861	687,537
33 .....	0.9914781	0.9910093	660,423	681,526
34 .....	0.9910776	0.9907894	654,795	675,399
35 .....	0.9906594	0.9905929	648,953	669,178
36 .....	0.9902504	0.9903913	642,892	662,883
37 .....	0.9898196	0.9901922	636,624	656,514
38 .....	0.9893656	0.9899885	630,143	650,075
39 .....	0.9888845	0.9897723	623,442	643,567



TABLE V—Contd.

Age. x.	The Probability of Living One Year from Each Age. p <sub>x</sub> .		Of 1,000,000 Born of each Sex, the Number Surviving at Each Age.	
	Males.	Females.	Males.	Females.
40 .....	0.9888848	0.9895383	616,513	636,986
41 .....	0.9878405	0.9892932	609,352	630,322
42 .....	0.9872903	0.9890275	601,955	623,574
43 .....	0.9866933	0.9887480	594,305	616,732
44 .....	0.9860583	0.9884621	586,397	609,793
45 .....	0.9853855	0.9881373	578,222	602,757
46 .....	0.9846691	0.9877001	569,771	595,607
47 .....	0.9838753	0.9870684	561,036	588,281
48 .....	0.9830138	0.9863597	551,989	580,674
49 .....	0.9821016	0.9854806	542,613	572,754
50 .....	0.9810630	0.9845191	532,901	564,438
51 .....	0.9798898	0.9834960	522,809	555,700
52 .....	0.9788763	0.9824375	512,295	546,529
53 .....	0.9759732	0.9813463	501,217	536,931
54 .....	0.9728250	0.9801747	489,174	526,918
55 .....	0.9720708	0.9789915	476,370	516,470
56 .....	0.9705385	0.9776787	463,065	506,620
57 .....	0.9689932	0.9763330	449,422	494,334
58 .....	0.9673466	0.9748611	435,487	482,635
59 .....	0.9656481	0.9731091	421,267	470,502
60 .....	0.9637383	0.9709040	406,796	457,850
61 .....	0.9618375	0.96890123	392,069	444,528
62 .....	0.9595281	0.9650443	377,107	430,309
63 .....	0.9569492	0.9623345	361,845	415,267
64 .....	0.9539882	0.9594383	346,267	399,626
65 .....	0.9508356	0.9567557	330,335	383,416
66 .....	0.9474950	0.9540682	314,094	366,836
67 .....	0.9439142	0.9513544	297,603	349,987
68 .....	0.9400807	0.9483101	280,912	332,962
69 .....	0.9356815	0.9446170	264,080	315,751
70 .....	0.9306771	0.9407834	247,095	298,264
71 .....	0.9251241	0.9364863	229,966	280,602
72 .....	0.9187557	0.9319285	212,747	262,780
73 .....	0.9114580	0.9266179	195,463	244,891
74 .....	0.9032135	0.9210279	178,156	226,920
75 .....	0.8943144	0.9147546	160,913	209,000
76 .....	0.8878005	0.9078515	143,907	191,184
77 .....	0.8805861	0.9001870	127,761	173,566
78 .....	0.8745601	0.8919686	112,505	156,242
79 .....	0.8694301	0.8830789	98,392	139,363

TABLE V—Contd.

Age. x.	The Probability of Living One Year from Each Age. <i>p<sub>x</sub></i>		Of 1,000,000 Born of each Sex, the Number Surviving at Each Age.	
	Males.	Females.	Males.	Females.
80.....	0·8646857	0·8746444	85,545	123,068
81.....	0·8570965	0·8660287	73,970	107,641
82.....	0·8470543	0·8557437	63,399	93,220
83.....	0·8323197	0·8438382	53,702	79,772
84.....	0·8169047	0·8291150	44,697	67,314
85.....	0·8001169	0·8147554	36,513	55,811
86.....	0·7756868	0·7970863	29,215	45,472
87.....	0·7460970	0·7780741	22,662	36,245
88.....	0·7212	0·7594	16,908	28,202
89.....	0·7002	0·7405	12,194	21,417
90.....	0·6818	0·7213	8,538	15,859
91.....	0·6624	0·7021	5,821	11,439
92.....	0·6405	0·6826	3,856	8,031
93.....	0·6210	0·6631	2,470	5,482
94.....	0·6030	0·6433	1,534	3,635
95.....	0·5838	0·6226	925	2,338
96.....	0·5652	0·6004	540	1,455
97.....	0·5445	0·5779	305	873
98.....	0·5265	0·5572	166	504
99.....	0·5091	0·5362	87	281
100.....	0·4902	0·5149	44	151
101.....	0·4713	0·4927	22	78
102.....	0·4527	0·4693	10	38
103.....	0·4308	0·4453	5	18
104.....	0·4080	0·4213	2	8
105.....	0·3828	0·3973	1	4
106.....	0·3564	0·3730	—	2
107.....	0·3245	0·3470	—	1

IV.—*A Note on the Distribution of Women in Occupations.*

By Miss B. L. HUTCHINS.

THE present paper has been mainly suggested by a passage of Professor Ashley's "Tariff Problem," in which the author considers the effect which changes in the distribution of the export trade may be expected to have on the distribution of workers in different occupations. Professor Ashley sees reason to fear that "England, with a lessening hold on the industries which require skill and cultivate independence, is turning apparently more and more to occupations in which it has a differential advantage over America and her colonies in the presence of a mass of cheap, low grade, and docile labour" (p. 110). It seems impossible to exaggerate the importance of giving full study and inquiry to the subject which is here indicated. To treat it fully or adequately would of course be beyond my scope or powers. The aim of the present paper is merely that of collecting a few facts and figures from the census returns which may help to show what changes in the distribution of employment among women can be discovered from the more recent censuses of occupations, and may contribute something towards the complete survey of occupations, men's as well as women's, which ought if possible to be undertaken.

I shall try to show what occupations include the largest number of women, with the increase or decrease in recent years, and the distribution in occupations according to age and condition. The work of women and girls is evidently indicated by the phrase "cheap and docile labour"; it will be interesting, therefore, to consider in which occupations the proportion of women to men is high, and whether these appear to be expanding more rapidly than others in which it is low. The first step towards answering these questions is to discover the distribution of women in classes of occupations. It will be unnecessary here to consider the proportion of women occupied to the female population. We know from the census report that it has slightly fallen, and that the proportion of women occupied to men occupied has also slightly fallen, but for present purposes these considerations may safely be neglected.

The first table deals only with women of 15 and upwards, in order that changes due to the raised legal age of child labour and the improved administration of Factory and Education Acts may not be confused (as sometimes happens) with genuine changes in distribution of occupations.

TABLE 1.—*Changes in the Distribution of Women of 15 and upwards in Different Occupations, 1881-1901.*

Classification as in 1901:	Number over 15 Occupied. (In thousands and decimals of thousands)			Per Cent. of Total over 15 Occupied.		
	1881.	1891.	1901.	1881.	1891.	1901.
I. General or local government	7.3	14.9	26.4	0.2	0.4	0.7
III. Professional occupations, and subordinate services.... }	188.1	236.2*	290.1	5.7	6.4	7.3
IV. Domestic offices and services..... }	1,444.9	1,649.4	1,622.7	45.3	44.8	40.9
V. Commercial .....	8.3	20.4	58.6	0.3	0.6	1.5
VI. Conveyance (including telegraph and telephone).... }	9.9	12.0	15.6	0.3	0.3	0.4
VII. Agriculture .....	61.4	49.5	56.8	1.9	1.3	1.4
IX. Mines .....	7.1	5.9	4.8	0.2	0.2	0.1
X. Metals, machines, &c. ....	36.0	41.2	58.5	1.1	1.1	1.5
XI. Precious metals .....	9.1	10.9	17.2	0.3	0.3	0.4
XII, XIII. Houses, furniture, and decoration..... }	19.6	22.5	24.2	0.6	0.6	0.6
XIV. Brick, cement, pottery, glass .....	22.6	26.6	30.8	0.7	0.7	0.8
XV. Chemicals, oil, grease, soap .....	7.5	13.2	24.8	0.2	0.4	0.6
XVI. Skins, leather, hair, &c. ..	14.8	18.3	23.5	0.5	0.5	0.6
XVII. Paper, books .....	88.8	58.0	83.3	1.2	1.6	2.1
XVIII. Textiles ..	544.6	575.2	601.4	17.1	15.6	15.1
XIX. Dress .....	580.1	632.5	680.1	18.2	17.2	17.1
XX. Food and lodging, to- bacco, &c. .... }	132.3	209.7	292.5	4.1	5.7	7.4
XXII. General, other and undefined .....	65.6	86.6	59.2	2.1	2.3	1.5
	3,193.0	3,683.4*	3,970.0	100.0	100.0	100.0

\* Excluding students.

The net gains and losses may be briefly summarised thus:—

	Per cent.		Per cent.
Government, professional, } commercial .....	+ 3.3	Service.....	- 4.4
Conveyance.....	+ 0.1	Agriculture .....	- 0.5
Metals and precious metals ...	+ 0.5	Mines ..	- 0.1
Bricks, chemicals, skins, paper	+ 1.5	Textiles .....	- 2.0
Food .....	+ 3.3	Dress .....	- 1.1
		Unspecified .....	- 0.6
	+ 8.7		- 8.7

Table 1 shows the distribution of employment of women in the three latter censuses. As the classification of occupations has been greatly changed in the census of 1901, it was necessary, in order to get a basis of comparison, to re-classify the sub-headings in 1881

and 1891. Thus in 1901 hosiery is for the first time classed as a textile industry, whereas it was previously grouped under "dress." In the columns under 1881 and 1891 it has therefore been transferred from "dress" to "textiles." Artificial flowers are grouped under "dress" in 1901, so they have been transferred from the heading "decoration" in 1881 and 1901. Some few small industries, such as "bone, horn, ivory," "pipe making" and others are included under "general and unspecified" in 1901; they have therefore been transferred in the earlier returns. The same course has been taken in other similar cases, which it would be tedious to enumerate. The metal trades show considerable change in the nomenclature of particular occupations; some old sub-headings have been dropped, and some new ones introduced. But it is possible to arrive at a fairly accurate result by adding all the metal workers together for each period. There is a drop both in the numbers and percentage of "general and unspecified" workers in the census of 1901, doubtless owing to greater precision in the enumeration of other occupations. But this drop does not amount to more than 8 per 1,000 from 1891, or 6 per 1,000 reckoning from 1881. On the whole the changes shown by this table are relatively inconsiderable, and woman once again appears as the conservative element in society. The only at all sensational change appears in the number of domestic servants, which show not only a relative but an absolute decline. This is explained, however, by the general report (p. 76) to be, in part at least, a statistical decline. In 1881 the daughters and other female relatives of heads of families who assisted in household duties were classed as unoccupied. In 1891 they were classed in "domestic service." In 1901 the earlier method was revived. Hence in 1891 the proportion both of servants and of total females occupied appears somewhat higher than it should. Textiles show an absolute increase, but a comparative decrease, nearly corresponding to the increase in other manufacturing industries, which have gone through the industrial revolution and developed the opportunities for women's employment more recently than they. A comparative decrease of employment is shown in "dress," which, however, shows a very large absolute increase in numbers. The decrease appears to occur chiefly in the millinery and dressmaking division, but it is difficult here to draw any precise conclusions, as the sub-headings have been greatly changed. The decreased employment under textiles, dress, and domestic service is balanced partly by an increase in professional and commercial employment, partly by an increase in non-textile manufactures.

The next table shows the proportion of women to men, the proportion of females at the three lowest age groups, and the proportion of married and widowed in total occupied in 1901. The highest proportion of women to men by a long way is found in domestic service, in dress, and in textiles, which three classes of occupation together include over 70 per cent. of all women occupied. But, as we have just seen, they show a tendency to remain stationary or decrease in comparison to total employment. The classes of occupations that tend to increase are those in which the

proportion of women to men is comparatively low, as a juxtaposition of the two tables will show.

TABLE 2.—*Showing the Proportion of Women per 100 Men Occupied, and the Proportions Aged 10—15, 15—20, 20—25, and Married or Widowed per 100 Females Occupied.*

	Number of Women per 100 Men Occupied.	Number 10—15 per 100 Females Occupied.	Number 15—20 per 100 Females Occupied.	Number 20—25 per 100 Females Occupied.	Number Married or Widowed per 100 Females Occupied.
General and local government	15·4	0·5	13·9	23·0	23·0
Professional occupations and their subordinate services }	94·5*	1·5	17·0	20·5	18·4
Domestic offices and services ...	555·8	4·0	25·7	23·3	18·5
Domestic in-door servants .....	2,683·2	5·0	30·0	26·2	7·2
Commercial .....	11·3	2·3	32·9	31·5	4·4
Conveyance (including tele- graph and telephone) .... }	1·5	17·0	31·4	20·2	15·5
Agriculture .....	5·4	2·2	15·5	14·2	43·2
Mines .....	0·6	4·0	35·3	18·0	30·0
Metals, machines, &c. ....	5·4	7·1	37·8	23·4	23·7
Precious metals, jewels, } instruments .....	14·3	8·0	38·2	23·7	14·5
Wood, furniture, decoration †	10·5	4·6	29·9	19·5	30·6
Brick, pottery, glass .....	23·3	7·0	35·0	23·0	27·7
Chemicals, oils, grease, soap ..	26·2	7·1	43·3	25·6	12·1
Skins, leather, hair .....	31·5	7·0	32·3	21·5	27·9
Paper, prints, books .....	48·4	8·4	37·8	22·8	15·9
Textiles .....	134·8	9·3	28·4	23·0	21·9
Dress .....	171·5	4·3	27·6	22·0	22·1
Food, tobacco .....	38·7	2·3	17·4	17·6	41·2
Others and undefined .....	9·0	3·7	22·3	16·9	43·4
Total occupied .....	41·1	4·8	25·9	22·3	22·0
Unoccupied .....	456·1	16·3	6·2	8·0	67·0

\* This percentage appears much too high and needs explanation. It is only in the subordinate services, in music, acting, and in tea-hing, that the numbers of women equal or surpass the numbers of men; in the learned professions women are, of course, absent altogether, or in a very small minority. The army and navy are not included, but form a separate class.

† Builders not included.

We may now subject the expanding trades mentioned by Professor Ashley to further analysis on the same lines. Tables 3 and 4 show these industries arranged after the plan followed in 1 and 2 for all industries. It has to be pointed out, however, that there is more room for error than in the broader classification. For one thing, the dealers of each class are separated in the census of 1901; so that the sub-headings appear rather smaller than they should do in comparison with the previous returns. The percentage of women returned as dealers is not, however, large, and on the other hand the figures of these industries are likely to be somewhat

swollen by additions from the "mixed and undefined class," so it is hoped that these possible errors may be mutually corrective.

TABLE 3.—*Changes in Employment of Women in certain Industries which have an Expanding Export Trade.*

	Number of Women Aged 15 and Upwards.			Per Cent. of Total Occupied Women Aged 15 and Upwards.		
	1881.	1891.	1901.	1881.	1891.	1901.
Tailoring .....	51,360	84,091	111,282	1.64	2.28	2.80
Jam .....	?	?	14,695	?	?	0.87
Cabinet making and upholstery .....	7,832	12,632	13,339	0.24	0.34	0.34
Indiarubber and water-proof goods .....	1,664	3,879	6,790	0.05	0.12	0.17
Cordage and twine .....	1,939	2,219	3,028	0.06	0.06	0.08
Soap .....	268	785	2,245	0.008	0.02	0.06
Condiments and pickles .....	656	1,156	2,027	0.02	0.03	0.05
Oil and floor cloth .....	22	74	88	—	0.002	0.002
Total .....	—	—	153,494	—	—	3.87

TABLE 4.—*Employment of Women in certain Industries in which the Export Trade and the Employment of Women show an Expanding Tendency 1901.*

	Number of Females. All Ages.	Number of Females per 100 Males Occupied.	Number of Girls under 15 per 100 Females Occupied.	Number Aged 15—20 per 100 Females Occupied.	Number Aged 20—25 per 100 Females Occupied.	Number Married or Widowed, per 100 Females Occupied.
Tailoring .....	117,640	98.4	5.4	29.7	22.7	26.3
Jam .....	15,899	255.2	7.6	45.3	26.4	9.4
Cabinet making and upholstery .....	13,959	16.3	4.4	31.0	20.9	26.6
Indiarubber and water-proof goods .....	7,370	66.1	7.9	42.9	25.3	12.7
Cordage and twine .....	3,239	47.1	6.5	39.9	19.0	22.8
Soap .....	2,403	53.0	6.6	48.6	27.5	6.0
Condiments and pickles ..	2,184	109.0	7.2	41.2	21.9	22.8
Oil and floorcloth ..	94	2.8	6.4	42.6	26.6	22.3
Total .....	162,788	68.1	5.7	32.6	23.0	23.6

Table 3 shows the numbers and proportionate increase of women. Tailoring, it will be seen, shows a marked increase.

*Tailors.*

	Females per 100 Males Occupied.	Number under 15 per 100 Females Occupied.	Number 15—20 per 100 Females Occupied.	Number 20—25 per 100 Females Occupied.
1881 .....	49.21	3.06	20.95	18.40
'91 .....	71.66	5.75	27.73	20.00
1901 .....	98.41	5.40	29.73	22.71

The increased percentage of children since 1881 is certainly indicative of a "parasitic" tendency, which, however, appears to have been checked since 1891. The increased proportion of women to men, and of young women to older ones, is probably due to the comparatively recent development of factory tailoring. As far as the census returns can tell us, the tendency in the tailoring trade appears to be towards the gradual disappearance of the small master and the development of larger businesses.

	Total Employers.	Total Employed.	Employers. Per Cent. of Employed.	Total Occupied.	Working on Own Account or no Statement.	Working on Own Account. Per Cent. of Total Occupied.
1891 ...	17,281	160,589	10·8	203,720	30,580	14·8
1901	13,645	200,338	6·8	237,185	23,202	9·8

29,130 males and 24,817 females are returned as home workers, and are included in the above figures, but as these were not separately distinguished before the census of 1901, we cannot say certainly whether they have increased or diminished in numbers.<sup>1</sup>

For jam making we have no separate return previous to the last census. It is an industry partially exempt from Factory Act regulation, employing a rough class of women on irregular and mostly unskilled work, and greatly needs stricter regulation and restriction of overtime. Indiarubber work requires special precautions, but under good management is not a specially low-class industry; some of the women's work is highly skilled and well paid. Soap is numerically a small industry, mainly carried on in a few factories, some of which give very good conditions.<sup>2</sup> In these and the other industries mentioned by Professor Ashley, it seems likely that the expansion visible is in part due to the introduction of large-scale production, and so far is perfectly legitimate. In so far as it may be due to the "differential advantage" of the specially cheap unorganised labour of particular districts, the remedy would seem to lie in requiring improved conditions through the instrumentality of the Factory Act. The growth of these comparatively new industries, employing many women and girls, is one good reason among others for strengthening the staff of inspectors, especially the women inspectors.

These industries taken together now employ 3·87 of all women over 15 occupied. Table 4 does not, however, show that a large proportion of women and children are employed. Jam is the single industry on the list that shows a high proportion of women to men,

<sup>1</sup> It is noticeable also that while the subdivision "tailoring" has increased, the great division "dress" has decreased. Some of the increased employment of tailors and tailoresses may be a transference from the dressmaking trade, due to the introduction of women's bicycles and the vogue of tailor-made garments among women in the 'nineties.

See "Women's Industries in Liverpool," A. Harrison, p. 23.



and none of these show as high a proportion of female children as do textiles. Jam was not separately distinguished until 1901, and the industries of cabinet making, indiarubber, cordage, soap, condiments and oilcloth employed so small a number of women in the earlier returns that it is not worth while to study the age distribution very closely.

We may next compare the state of things in textiles with those to which Professor Ashley has drawn our attention. [Tables 5 and 6.]

TABLE 5.—*Changes in Employment of Women in Textiles, 1881 to 1901. Classified as in 1901.*

	Number Over 15 Occupied.			Per Cent. of Women Over 15 in all Occupations.		
	1881.	1891.	1901.	1881.	1891.	1901.
Cotton.....	263,464	283,618	296,119	8·25	7·70	7·46
Flax .....	7,271	5,108	3,111	0·23	0·14	0·08
Fustian .....	4,648	4,511	3,283	0·15	0·12	0·08
Wool and worsted.....	109,348	115,578	109,361	3·42	3·14	2·75
Silk .....	38,255	28,884	22,270	1·20	0·78	0·56
Hemp, &c. ....	7,852	8,101	11,357	0·25	0·22	0·29
Mixed or unspecified .....	79,685	77,326	79,587	2·50	2·10	2·00
Dyeing, &c. ....	5,259	6,260	7,861	0·16	0·17	0·20
Dealers .....	28,801	45,787	68,584	0·90	1·24	1·70

TABLE 6.—*Textiles, 1901.*

	Number of Females. All Ages.	Females per 100 Males Occupied.	Number of Girls under 15 per 100 Females Occupied.	Number Aged 15—20 per 100 Females Occupied.	Number Aged 20—25 per 100 Females Occupied.	Number Married or Widowed per 100 Females Occupied.
Cotton.....	332,233	168·7	10·9	27·5	22·7	24·3
Fustian .....	3,552	172·4	8·3	31·5	23·8	26·7
Flax, linen ....	3,347	292·1	7·0	30·6	22·0	26·1
Wool and worsted....	122,069	139·0	10·5	27·8	22·9	18·5
Silk .....	24,467	235·7	9·0	27·0	19·7	24·9
Hemp, &c. ....	11,984	97·0	5·2	35·3	20·0	30·1
Mixed or unspecified	86,520	216·5	8·0	29·7	21·0	24·5
Dyeing and bleaching	8,560	16·6	8·2	33·3	25·4	14·5
Dealers .....	70,490	78·1	2·7	30·2	28·6	10·9
Total textiles ....	663,222	134·8	9·3	28·4	23·0	21·9

Except in the cases of hemp, dealers and dyers, the proportion of "cheap and docile labour" is much greater than in the comparatively low-class industries we have been considering. In flax nearly three women to one man are employed, and in wool, the most "manly" of textile industries proper, there are yet 1·39 women to every man. The proportion of female children is likewise higher in textiles than

in any other manufacturing industry.<sup>3</sup> As in nearly all other industries, the highest proportion of female employment occurs in the age group 15 to 20. This marked predominance of the girl workers is illustrated by the curious fact that in some industries, as for instance tailoring, earthenware, indiarubber and waterproof goods, in which men outnumber women in the totals, girls outnumber boys at the age group 15 to 20.<sup>4</sup>

We find that in 1901, in England and Wales :—

Of 1,339,279 girls aged 10—14	—	70,262, or 5'2 per cent., were occu- pied (19,736 of these being domestic indoor servants)	
Of 331,491 girls aged 14—15	—	131,065, or 39'5 per cent., were occu- pied (44,009 being domestic indoorservants)	
Of 1,638,621 girls aged 15—20	25,483, or 1'5 per cent., were married or widowed	1,079,424, or 65'9 percent., were oc- cupied (385,613 being domestic indoorservants)	Of these :— 3,043, or 0'2 per cent., were both occupied and married or widowed.
Of 1,648,278 girls aged 20—25	451,723, or 27'4 per cent., were married or widowed	928,474, or 56'3 per cent., were occu- pied (336,869 being domestic indoorservants)	49,164, or 3'0 per cent., were both occupied and married or widowed.
Of 2,769,886 women aged 25—35	1,828,725, or 66'0 per cent., were married or widowed	843,733, or 30'5 per cent., were occu- pied (269,068 being domestic indoorservants)	And 183,201, or 6'6 per cent., were both occupied, and married or widowed.

These figures are sufficiently striking. But as the proportion of servants is so large, let us take these figures for the manufacturing district of Lancashire, which show the state of things in industry proper more clearly.

<sup>3</sup> Except the manufacture of tobacco, in which the figures are :—

Total Females Occupied.	Girls under 15.	Girls under 15. Per Cent. of Total Females Occupied.
19,972	2,309	11'6

<sup>4</sup> The census for 1901 shows an increase in the proportion of women occupied between 15 and 25, but a decrease at every age-group above 25 years. General Report, p. 78.

Of 180,785 girls aged 10—14	—	21,893, or 12·1 per cent., were occu- pied (1,355 being domestic indoor servants)	
Of 45,017 girls aged 14—15	—	26,321, or 58·5 per cent., were occu- pied (2,811 being domestic indoor servants)	
Of 228,895 girls aged 15—20	3,384, or 1·5 per cent., were married or widowed	176,153, or 76·0 percent., were oc- cupied (28,391 being domestic indoor servants)	And 801, or 0·3 per cent., were both occupied and married or widowed.*
Of 237,884 girls aged 20—25	54,179, or 22·8 per cent., were married or widowed	154,539, or 64·9 percent., were oc- cupied (29,776 being domestic indoor servants)	And 14,469, or 6·1 per cent., were both occupied and married or widowed.
Of 392,790 women aged 25—35	261,352, or 66·5 per cent., were married or widowed	149,361, or 38·0 percent., were oc- cupied (25,599 being domestic indoor servants)	And 47,816, or 12·2 per cent., were both occu- pied and married or widowed.

Two noteworthy points about these figures are, first, the unfortunately high percentage of children that are still employed in Lancashire; second, the curious fact that in Lancashire fewer women between 20 and 25 are married than in England and Wales, comparatively speaking. It nevertheless appears that in this typical working-class district the greater number of girls and women do marry, and the greater number of those who marry leave work. Or in other words, there are a very large number who spend their pre-matrimonial years in the factory, but only a comparatively small proportion who continue there after marriage. The predominant type of female worker is a girl who is likely to be married. The married woman is in a small minority. It may be interesting to compare the number of women and girls employed in textiles with the total occupied in Lancashire.

TABLE 7.—*Showing for Lancashire the Percentages of Married or Widowed and Single Women Occupied in Textiles to Total Females in all Occupations.*

	Total Females in Occupations.	Single Women.		Married or Widowed Women.	
		In Textiles.	Number Occupied in Textiles Per Cent. of Total Females in Occupations.	In Textiles.	Number Occupied in Textiles. Per Cent. of Total Females in Occupations.
All ages.....	694,091	232,873	33·5	74,010	10·7
10—14 .....	21,893	17,345	79·2	—	—
14—15 .....	26,321	15,340	58·3	—	—
15—20 .....	176,153	83,469	47·4	557	0·3
20—25 .....	154,539	59,034	38·2	10,716	6·9
25—35 ....	149,361	37,901	25·4	30,595	20·5
35—45 .....	79,956	13,053	16·3	19,456	24·3
45 .....	125,868	6,731	5·1	12,686	10·1

In this table we perceive that the percentage of married or widowed women in textiles rises as the total number of women employed falls off, but the married or widowed occupied are completely overbalanced by the numbers of unmarried employed at the earlier ages. The number of married or widowed women of all ages occupied in textiles, in Lancashire, is less than the number of unmarried girls between 15 and 20 so employed, as will appear from the following statement:—

*Unmarried Girls, 15—20.*

Total Occupied and Unoccupied.	Occupied in Textiles.	Number Occupied in Textiles. Per Cent. of Total Aged 15—20.	Girls 15—20 Occupied in Textiles. Per Cent. of Total Females Occupied in Textiles.
225,511	83,469	37·0	27·2

*Married or Widowed Women, all Ages.*

Total Occupied and Unoccupied.	Occupied in Textiles.	Number Occupied in Textiles. Per Cent. of Total Married or Widowed.	Married or Widowed Occupied in Textiles. Per Cent. of Total Females Occupied in Textiles.
937,577	74,010	7·9	24·1

It follows that though the percentage of married or widowed women in textiles is low, the proportion of married women who have literally “gone through the mill” in earlier life must be considerably greater.

The most obvious consideration suggested by these tables is the urgency of securing healthy conditions of work, and reasonable

hours of employment for young girls in those important years when the constitution is developing and the character forming, under influences that may make or mar the prospective wife or mother for life, and perhaps not for *her* life only. Girls over 14 are permitted by the Factory Act to work the full factory day of ten hours exclusive of meal times.<sup>5</sup> In many non-textile factories these hours have been shortened by trade union action, or voluntarily by employers, some of whom avow their conviction that it is not even profitable to employ their hands the full legal day, and that "in nine hours you get as much work out of the girls as it's in them to do."<sup>6</sup> But it is still customary in textiles to work the full time permitted.<sup>7</sup> Infant mortality is notably high in several of the large textile towns, and is usually supposed, no doubt with some justice, to be connected with the employment of married women. It seems at least worth consideration and inquiry whether the long hours worked by girls from the age of 14 onwards may not involve considerable strain, and impair their capacity for healthy motherhood later on.<sup>8</sup>

So far as the figures in Tables 1 to 6 can be held to be reliable, it would seem that the three great employments of domestic service, textiles and dress are still numerically the largest fields for women's work, but that there is a tendency towards a more varied distribution of occupations and less concentration. So far so good; there is no particular reason why vast numbers of the women employed should earn their living in the same way, and a widening of their field of employment may be very beneficial. We can, however, see that Professor Ashley's weighty warning of the dangers of carrying on our industry and trade through "cheap and docile labour" is one which it behoves us all to heed. After a century of Factory Acts and efforts at social reform, it is disheartening to find the percentage of children employed still so high, especially in particular districts and particular industries. The employment of girls between 15 and 20 in manufactures can hardly, except by sentimentalists, be reckoned a positive evil; under proper conditions it need not be an evil at all. But undeniably there is something disquieting, something that detracts from the dignity of our great Lancashire trades and the pride we all take in them, in the fact that they are so largely built up on girls' and children's work.

<sup>5</sup> Factory and Workshop Act, 1901, Section 24, Clauses (1) and (5).

<sup>6</sup> Harrison, *op. cit.*, p. 30.

<sup>7</sup> See Miss Anderson's memorandum given to the Committee on Physical Deterioration, p. 123: "Shorter and easier hours obtain in many non-textile factory processes . . . . . than in either cotton or jute mills. The highly organised conditions and extraordinarily costly specialised machinery in these textile trades mean, first, a far greater pressure as to output; secondly, more heat and noise, often more difficulty as to ventilation; further, either dust or humidity is inseparable from certain of the processes."

<sup>8</sup> Another point worth mentioning is that it is difficult for girls who work these long hours to attend classes for technical training. See Mr. Ramsay Macdonald's remarks in "Women in the Printing Trades," p. 66. The same cause is obviously a hindrance to obtaining instruction in housewifery and domestic arts.

In the textile industry alone, over one-fourth of the working population consists of boys under 15 and girls under 20. This is a higher proportion of "cheap and docile labour" than is reached even by the not very high class industries of tailoring and india-rubber, although these, as we have seen, are expanding trades likely to attract an increasing proportion of young persons.

	Total Occupied, Males and Females.	Boys Under 15, and Girls Under 20.	Boys and Girls. Per Cent. of Total Occupied.
Textiles, Lancashire .....	523,646	139,566	26·7
Tailoring, England and Wales	237,185	43,749	18·4
Indiarubber and waterproof...	18,516	4,228	21·7
All occupations, England and Wales .....	14,328,727	1,645,956	11·5

In such typical towns as Burnley, Oldham and Preston, about one-fourth of the working population in all industries together consists of boys under 15 and girls under 25.<sup>9</sup> Let us see to it at all events that these young people are not employed under conditions that permit the competitive struggle to rob society of powers and energies that are yet latent and undeveloped, and that they have leisure to learn something of the aspects and responsibilities of the fuller life that will come to them by and by. There is much to be done in the way of inquiry and in the education of public opinion before the conditions of women's and girls' employment can be made to satisfy even a very modest ideal of what the life and work of the mothers of present and future citizens should be.

#### V.—*The International Statistical Institute.*

By J. A. BAINES (*Hon. Foreign Secretary*).

ONE of the Nestors of European statistics, happily still with us, classes the operations composing, in the aggregate, the evidence of statistical inquiry under three heads, and after the observation of the social facts in question and the grouping and numerical treatment of the raw material thus obtained, he places "the further scientific employment of the numerical material, especially with a view to the establishment of the existence of regularities in social life." In the last phrase we find the fundamental principle of our work—comparison. Isolated observation is sterile, association and co-ordination alone are productive of fruitful results. Given the first essential of statistical inquiry, the successive record of some social fact on uniform lines for the longest possible period, the next

<sup>9</sup> The census does not give separate returns for those between 15 and 20 and 20 and 25 in towns.

process, without which the conclusions will be but narrow, is the co-ordination of the figures with the corresponding contemporary record of other social phenomena in the same community more or less intimately connected with the former. The result represents the operation of certain influences or the trend of certain tendencies, and, interesting and profitable as this may be, the element of time assumes the predominant place in the deductions. Carry, however, the inquiry beyond the frontier, and compare the course of the corresponding facts under different conditions, geographical, political and racial, or the like, and whilst, on the one hand the type, or aggregate of general features of a merely political unit have been ascertained, on the other, by ignoring the political boundary, the prevailing facts of wider and more vital differences, of race, religion, physical attributes such as climate and conformation of the earth, and even of broad groups of occupations may be demarcated. The wider the field, therefore, and the greater the variety in the series of contemporaneous facts with which the statistician is enabled to deal, the more valuable is the harvest he is likely to garner.

It was from this side that the question of internationality in statistical inquiry was approached in 1851 by M. Quetelet, who seized the opportunity afforded by a noteworthy gathering of statisticians in London, at the time of the Great Exhibition, to point out that even as the older sciences had recognised the need of a common language, as of co-operation and co-ordinated methods in their research, so, the statistical study of the variety and fluctuation of modern communities, with their currents, reefs and quicksands, was no less in want of systematic uniformity of record and facilitation of international comparison. His efforts, warmly supported by the late Prince Consort and by the leading statisticians of Europe, were successful in instituting an International Congress, the first meeting of which appropriately took place in Brussels, the chief place of his labours, in the year 1853. In addition to the high merit of the papers contributed, this gathering had the further distinction of inaugurating the courteous practice of interchanging publications and proceedings which has since prevailed amongst statistical institutions throughout the civilised world. The Congress subsequently met in Paris, Vienna, London, Berlin, Florence, The Hague, Petersburg and Budapest, and on each occasion valuable aid was given not only to the original object of the association, but also to the ventilation of special questions of social economy brought forward by members well entitled to speak with authority regarding them.

The seeds of dissolution, however, appear to have been sown no later than the third, or Vienna, Congress, when "the increasing number of laymen and those taking no official part in the proceedings" led to the formation of an organising committee, consisting mainly of the official representatives of the Governments recognising the Congress. But this step did not put an end to the intrusion, and when the Congress met in London, the President, the late Prince Consort, deprecated the restriction of the proceedings to consultations amongst government officials, and welcomed the co-operation of the

public in the discussion of the subjects brought forward. In theory, the sentiment is unimpeachable, but in practice, from a starting point of about 150 in attendance, the number reached 750, at Florence, and averaged 500, of whom, as it was euphemistically remarked, "the majority was attracted by motives which had but little in common with statistical research." Long speeches, moreover, crept into vogue, with the consequence that no time being left for discussion, subjects were relegated to the printed proceedings on the one hand, and, on the other, resolutions were accepted formally and without consideration. A permanent executive was formed on the next occasion, but this came to grief upon the rock of officialism. State directors of statistical establishments, who formed the leading element in the controlling body, were found hampered by their relations to the Governments they represented, whilst, on the other hand, it was sought by many of the same body to render their decisions binding upon those Governments. The executive, and with it the whole organisation, faded into abeyance, and the Proceedings of the 1876 Congress at Budapest, the most voluminous and one of the most brilliant of the series, was the swan-song of the original institution.

The links broken in 1878 were not allowed, however, to remain permanently severed, and, even as the Exhibition of 1851 was the occasion which saw them first forged, the Jubilee of the Royal Statistical Society of London had the honour of seeing them reunited. In the official letter of invitation to foreign Governments to take part, through their leading statisticians, in the celebration of this event, it was stated by the Foreign Secretary of that day, Lord Granville, that the opportunity would be taken of reviewing the work achieved by the defunct Congresses, and, also, of considering the possibility of establishing a successor by which that work might be carried onwards on lines more conducive to its permanence and development.

The brilliant gathering of statisticians from all quarters of the world which made the year 1885 memorable in the annals of the Society, had the advantage of hearing the case for an international organisation put before them by Professor von Neumann-Spallart, an advocate in full sympathy with the work done in the past, but at the same time by no means blind to the causes which led to its interruption. His presentment of his case was none the less convincing from the fact that he did not confine himself to the consideration of the objects in view, but, through the submission of a comprehensive draft scheme for discussion, proved that he had satisfied himself as to the means by which he thought they could best be attained. After full discussion, his scheme was adopted in principle and in its main features, and, with various modification of detail, it now forms the great Charter of the International Institute of Statistics.

The risky straits between the Scylla of officialism and the Charybdis of platonic academism in an institute, whereof the great majority of the members are in the employment of their respective States, have been passed, so far successfully, by the



divestiture of the Institute of all shreds of official authority, and leaving it to exert its influence exclusively by the wide reputation of its members and the intrinsic merit of the conclusions at which they arrive. While, on the one hand, every proposal brought forward is subjected to the criticism of the directors of all the main statistical establishments of the world, without whose knowledge and experience it would be futile for the Institute to make itself responsible for its promulgation, it is, on the other hand, through these directors alone that the proposals adopted have any chance of gaining acceptance by the Governments to which they are made. Similarly, of course, in the discussion of the views put forward by statisticians who happen to be also officials, the private student, like any other free-lance, has his chance of delivering his charge with a weight which would never be his apart from the help of the allies he may pick up within the four walls of the committee room.

In regard to the executive business of the Institute, which, in the case of a body meeting every two years only, is necessarily considerable, the effort is made to maintain continuity in the procedure without creating an oligarchy out of touch with the members at large. The officers are elected for two years only, which gives a mild sub-democratic flavour to their tenure, as well as to the opportunity for the exercise of international courtesy, and at present, Austria, France, Germany, Russia, England and Italy, are represented in the hierarchy. As the retiring officers are eligible for re-election, changes may be called accidental only, and there is general agreement among the members that, whatever the defects in the standing orders—and being human inventions, perfection is out of the question—the friction under them is reduced to its minimum in the hands of the admirable *personnel* by whom the code has been administered of late years.

The number of members is at present just short of 200. The dignity of honorary membership is conferrable for exceptional distinction nominally without limit in number, but in practice, under discreet restrictions. At the present time 22 members are thus honoured. Among those elected in the year 1903, the late President of this Society, Lord Avebury, took rank with his predecessors in the Chair, Lord Goschen and Sir Robert Giffen, and with their veteran colleague, Mr. F. Galton. The number of ordinary members, limited by the rules of the Institute to 200, stands now at 170. Those representing this country are 19, a number exceeded by France and Germany alone. Twenty-one countries appear on the list, and no single national unit is allowed a greater strength than one-fifth of the total number elected. It must be admitted, in passing, that the existing scheme and practice of election is not altogether satisfactory. Not only is it necessary under it to allot a considerable portion of the valuable time available at a congress to this part of the agenda, but it is by no means certain that qualifications other than statistical or economical merit are not allowed to assume an undue predominance in the voting.

The Institute holds its Congress every other year at some capital

city, and since its creation in London in 1885 it has met in Rome, Paris, Vienna, Bern, Petersburg, Christiania, Budapest, and Berlin. In 1893 it was induced, by the magnetic influence of a World's Show, to cross the Atlantic, and foregather in Chicago. It was not the first time that an exhibition had been made the reason for the selection of the place of meeting, but experience seems to indicate that the association is not altogether conducive to the objects of the Congress, the latter running the chance of lapsing into a side-show on the one hand, whilst its members, on the other, unless exceptionally callous to the seduction of cakes and ale, are liable to be swept away by the flood of non-statistical opportunities presented to them.

In the following table<sup>1</sup> will be found some of the numerical features of the career of the Institute since its foundation :—

Year.	Place.	Number of Members on Roll.	Attendance.				Percentage on Total Attendance.	
			Members	Visitors.	Total.	Foreigners.	Members	Foreigners.
1887 ..	Rome .....	156	58	36	92	42	61	45
'89....	Paris .....	168	39	27	66	27	59	41
'91....	Vienna .....	174	62	19	81	59	77	73
'93....	Chicago ..	171	22	57	79	18	28	23
'95....	Bern .....	170	46	60	106	59	43	56
'97....	Petersburg	168	46	48	94	52	49	55
'99....	Christiania	173	35	73	108	68	32	63
1901....	Budapest ..	170	59	79	138	85	43	62
'08....	Berlin .....	193	82	148	230	90	36	43
	Average....	171	50	61	110	56	45	51

The total attendance has been irregular, and it will be seen that the average is markedly raised by the unusually large concourse at Berlin, previously to which it had been 95 only. It is more to the point, however, to take stock of its international character, as shown in the proportion of the foreign element to that native to the State in which the Institute holds its meeting. This, it will be seen, has been well maintained. The exceptional figure for 1891 is due almost as much to the small number of local delegates as to the large gathering of members from abroad ; whilst the reverse was the case in 1893, when but a handful of the European contingent found its way to the Far West. The last Congress, in Berlin, occupies a middle place in this respect, since an increased number of members and delegates from abroad was outweighed by the large number of local members and delegates who were present. It is interesting to compare these proportions with those given for the original Congresses, when only at the first and last did the percentage of foreign visitors rise to 40. In the other cases it ranged from 11 in Florence to 35 in Paris. There is not improbably a close connection between these proportions and the preponderance of "laymen," to which Herr von Neumann-Spallart referred in the

<sup>1</sup> Prepared by Hofrath Dr. v. Juraschek.

historical summary he gave the Society in 1885, and here, again, the figures of the Institute are not without their significance.

At the three earlier Congresses members predominated in number, but the proportion of non-members, which had averaged 34 per cent. up to then, rose between 1893 and 1901 to 61 per cent., whilst at Berlin last year it was no less than 64. Consequently, as under the standing orders non-members may not only take part in the discussion of all questions excepting those of election and administration, but vote upon them, a large recruitment of local delegates gives a great advantage to what may be called the home team, in the decision of matters which the Congress meets to discuss.

The extent and variety of those subjects are, it is unnecessary to repeat, exceedingly great. Confining the survey to the questions on which the Congress in full session has recorded its conclusions, which have been concisely summarised by Dr. J. Bertillon, the list will be found comprehensive enough for the most hardened statistical cormorant. The head of census is naturally voluminous, and much of that which comes under it was reviewed in these pages six years ago. Of the rest, one most valuable result has been the compilation by Dr. Bertillon of the figures for different countries at various times during the last century, along with which may be placed the publication on areas by MM. Levasseur and Bodio. A draft scheme for the enumeration, partial or by estimates from representative areas, of countries where a general census is not practicable, has also been prepared, though not yet adopted. The details esteemed necessary in the registration of births, deaths, and marriages have also been formulated, and, in the cases of causes of death, a classification and nomenclature has been proposed and adopted in a good many important countries. Similarly with migration, though the interchange of tabulated results has not yet been effected to the extent proposed. The main heads under which judicial statistics may most usefully be compiled, the classification, by occupation, of depositors in savings banks, the details of public elementary instruction, and a formidable but useful catechism on the production and consumption of alcohol, have all been brought on the record of the demographic section of the Institute's work. In the province of economics, a good deal of attention has been paid to the question of wage returns and workmen's budgets, and an excellent review of recent industrial censuses was recently published. There is, of course, a strong representation of the need on the part of labour departments for conference and agreement as to the form of their returns. The same may be said in regard to the agricultural department of statistics, where on several occasions the deliberations of the Institute have usefully exposed the incompleteness of the available information and the difficulties of strict comparability between the data of different States. Uniformity in the principal features of foreign trade returns, information as to coasting trade, length of trips, tonnage measurement, fresh-water navigation, valuation and the place of origin of merchandise, the output of the precious metals and their consumption in coinage and otherwise, the

valuation of stocks, shares, &c., and the taxation of the same, all are found in the list of subjects on which the Congress has expressed its opinion. There is one subject which has been discussed at some length, but on which it is, perhaps, superfluous to say no decision has been passed, to wit, the incidence of customs duties. How it was debated in Berlin it is hard to describe; what will happen, when the genial *rapporteur* brings up the adjourned discussion in London, is something not to be contemplated with equanimity.

The above sketch gives a general outline of the work of the Institute, and as the Congress sits for practically only five and a half days, it is obvious that without an extensive and well-devised scheme of devolution, it would be impossible to cover more than a corner of the field of work before it. The first step, accordingly, is the partition of the Congress into three standing committees dealing respectively with demography, economics, and finance, and statistical methods and administration. Each member inscribes himself under one or other of these heads, though in practice there is occasional interchange of *personnel*, according to the subjects under discussion, which are notified on a general list published in anticipation of the meetings. Any resolution adopted by a Committee is reported to a full session for discussion and disposal. The time available for these full sessions is but short, amounting at most to little more than seven or eight hours, of which several are necessarily allocated to ceremonial, elections and administrative business. The distribution of the rest between original work and the sectional proposals is, therefore, a task of some delicacy. The latter being often numerous and involving many questions of practical importance, carry with them the individual interest of a large number of those who have assisted in their elaboration, who would naturally be disappointed if the results of their deliberations were to be ignored or postponed in the "general slaughter of the innocents" which is not unusual when a busy meeting begins to feel itself pressed for time. On the other hand, there are always in the contributions brought directly before the full Congress some of such weight and general interest to statisticians that no member conversant with the language in which they are presented would like to miss them. It must be admitted, however, that occasionally one of them extends to such a length and depth that not only does it monopolise the greater part of a sitting, but it cannot be adequately discussed, compatibly, that is, with the claims of the rest of the agenda upon the attention of the Congress. When the paper is circulated beforehand, and merely formally presented at the sitting, it can obtain the consideration it deserves. Otherwise, some of these contributions must be received and distributed at a time when it is impossible to master them, so they have to repose on the hope, if not the expectation, of a subsequent and appreciative perusal during the twenty-three intercalary months.

It need not be supposed, however, that this Institute, any more than its fellows in the older sciences, expends its Congress on laborious days of exposition and discussion. Such gatherings bear their fruit on many branches, of which by no means the least

useful is the sociability fostered by them. Men of every country, whatever their national differences in other respects, are here united by their common interest in a vast field of investigation, and come into intercourse with those whose names have long been familiar to them as masters of their craft, and are thus enabled to improve the occasion, not merely by "talking shop" over the committee-room table, but by exchanging views on things in general side by side at the dinner table, in the reception room, or even in a railway carriage or on the deck of an excursion steamer.

This is an aspect of the Institute not at all inopportune at the present time to our Fellows. One of the last resolutions adopted by the Congress last year was the acceptance with hearty unanimity of the invitation proffered on behalf of the Royal Statistical Society by Major Craigie, its President, for the Institute to hold its next meeting in London. There can be no question as to the appropriateness of the offer, when it is borne in mind that this city saw the birth of both the old and the existing international organisation, that it provided the latter with the venerable President who watched over its career from the beginning until his death fourteen years after, and that an interval of twenty years of harmonious and useful work justifies the desire of its foster-parent to welcome as an adult the Institution it last peeped at in its cradle. There will be this important distinction between the Congress of 1905 and those which have preceded it, that in the latter the host has been the State in which the meeting is held, and all the proceedings and attributes of the Congress have been of a more or less official character, on this occasion, the Government of the receiving country being without a central department of statistics, the Institute will be the guest of our own Society. Fortunately, however, this Society has, from the beginning, stood in close and friendly relations with the departments of State chiefly concerned with statistical operations, from which, indeed, have been drawn some of its most active and distinguished members. In connection with the Jubilee of the Society, moreover, it will be remembered that the Foreign Office of Great Britain rendered it the most valued service of unofficially transmitting through H.M.'s representatives abroad the invitations to the different Governments to depute delegates to London; and there is every reason to hope, therefore, that there will be on this occasion no less co-operation on the part of the State than that most gratefully recognised by the Society twenty years ago. But, however this may be, the share of the duties and responsibilities of host which can thus be transferred is insignificant compared to that which would fall upon the State in continental capitals, but which must in London be borne by the Fellows of this Society. Happily, there is no reason to anticipate that that share will not be willingly undertaken and triumphantly carried to its conclusion.

VI.—*A Further Note on the Annual Report of the Registrar-General.*

By REGINALD DUDFIELD, M.A., M.B., M.O.H. Paddington.

IN the penultimate paragraph of his "Note on the Sixty-fourth Annual Report of the Registrar-General," Mr. Welton says, that "it is . . . . . for medical and other experts" to say whether the new tables which he suggests should be used by the Registrar-General "will give them all they want." As the information which would be contained in the new tables would, in my opinion at least, fall far short of the requirements of medical officers of health, I venture to submit an alternative scheme.

No one will dispute Mr. Welton's contention that "the remarkable variations in age distribution . . . . . reduce to a low point the utility of the tables" of causes of death in registration counties, which take up seventy-five pages of the Report. Indeed, one might call attention to the multiplicity of occupations carried on in the various townships included in the different counties, as a further factor in reducing the value of the statistics for registration counties. It appears to me, however, that the suggested grouping of registration districts "according to their character" would be out of place in an annual report, and of very little value to medical officers of health. Further, I can see no utility in the proposed limited sex-age tabulation of selected causes of death.

In my opinion, the proper function of the Registrar-General's annual reports is to record the statistics of the "unit" districts. Grouping, in any form, and the study of various statistical problems should be left for others to undertake, and should be kept apart from the annual record of elementary data. Medical officers of health require annual returns of the causes of death, distinguishing the sexes and ages of the deceased persons, in areas having well-defined boundaries and characteristics. The areas selected as the units for tabulation, should be those for which the fullest information is given in the census reports. The only question for consideration is, which of the many areas used in the latter reports should be selected for the tabulation of annual statistics.

The registration districts are unsuitable, as their boundaries are too little known, the resulting statistics would be too cumbersome and in many cases useless on account of the small numbers available, and finally, insufficient information is tabulated in relation to these districts in the census reports. Registration counties are practically unintelligible quantities, and have already been condemned for this purpose. What has been said about these counties applies almost equally to the administrative counties. The unit area which appears to me to promise the most valuable results is the "sanitary district." All the more important data collected at the census are tabulated for all sanitary districts, those relating to occupation

excepted. It is not, however, necessary that separate tables should be prepared for every sanitary district. It would suffice if the more important townships, say the lists included in the Quarterly Reports, were selected. These could be arranged in groups corresponding to the administrative counties, and a supplemental table for "The Rest of the Administrative County of —" be appended at the end of each group. This would in effect give a series of tables for urban and rural districts, as "The Rest of the County" would be almost exclusively rural in character.

For the new tables I do not think such a complete subdivision of the causes of death as is now given for the registration counties is necessary. Shorter tables, following either the "Abridged Table" of the International Commission of Statistics or "Schedule B" of the Society of Medical Officers of Health would suffice. Similarly as regards the ages of the deceased persons, seven age-groups, viz., "under 1 year," "1—5 years," "5—15," "15—25," "25—65," "65 years and upwards," and "all ages," would meet the needs of most workers, but if the officials at the General Register Office could give a further subdivision of ages, it would facilitate the labours of those engaged in the work of more intricate character, such as the construction of life tables. It is hardly necessary to say that in each table the deaths of the two sexes would be shown separately.

The scheme here sketched out would give the following series of tables:—

- (a) "Extended tables" (as at present) for—
  - (i.) England and Wales, and
  - (ii.) London (which would be the Administrative County);
  - and
- (b) "Abridged tables" for
  - (iii.) The selected sanitary districts; and
  - (iv.) (Supplementary) "the rest of the administrative county of —."

With such a series of tables, any inquiry relating to health matters, such as the influence of aggregation, of housing, or of occupation, could be undertaken.

One objection, I anticipate, may be urged against any change from the present system, viz., the fact that the boundaries of registration and sanitary districts are not in every case co-terminous. Such objection ought not to be allowed to stand in the way of reform. The boundaries of the registration districts were originally fixed with relation to Poor Law Unions, at a time when sanitary districts were non-existent. Having regard to the great claims which sanitary administration has for proper statistical data, any overlapping of boundaries should be at once remedied. Reform is inevitable, and delay only means loss of valuable information.

VII.—*Agricultural Returns of Great Britain, 1904.*

PRELIMINARY statement for 1904, compiled from the returns collected on the 4th June, and comparison with 1903.

## CROPS.

Distribution.	1904.	1903.	Increase.		Decrease.	
	Acrea.	Acrea.	Acrea.	Per cent.	Acrea.	Per cent.
Total area of land and water .....	56,786,741	56,786,741	—	—	—	—
Total acreage under all crops and grass*	32,323,176	32,343,579	—	—	20,403	0·1
Wheat .....	1,375,284	1,581,587	—	—	206,303	13·0
Barley .....	1,840,688	1,858,484	—	—	17,796	1·0
Oats .....	3,252,975	3,140,242	112,733	3·6	—	—
Rye .....	55,714	59,064	—	—	3,350	5·7
Beans .....	252,782	239,655	13,127	5·5	—	—
Peas .....	175,608	181,511	—	—	5,903	3·3
Potatoes .....	570,209	564,286	5,923	1·0	—	—
Turnips and swedes...	1,604,103	1,603,301	802	0·1	—	—
Mangold .....	398,827	401,627	—	—	2,800	0·7
Cabbage .....	64,627	64,803	—	—	176	0·3
Kohl-rabi .....	15,607	19,297	—	—	3,690	19·1
Rape .....	97,772	99,004	—	—	1,232	1·2
Vetches or tares .....	128,229	144,966	—	—	16,737	11·5
Lucerne .....	55,706	60,355	—	—	4,649	7·7
Other crops .....	100,971	106,935	—	—	5,964	5·6
Clover and rotation grasses—						
For hay .....	2,322,789	2,412,445	—	—	89,656	3·7
Not for hay .....	2,348,480	2,395,381	—	—	46,901	2·0
Total .....	4,671,269	4,807,826	—	—	136,557	2·8
Permanent grass—†						
For hay .....	4,765,470	4,754,970	10,500	0·2	—	—
Not for hay .....	12,338,331	12,179,525	158,806	1·3	—	—
Total .....	17,103,801	16,934,495	169,306	1·0	—	—
Flax .....	563	925	—	—	362	39·1
Hops .....	47,799	47,938	—	—	139	0·3
Small fruit .....	77,952	76,152	1,800	2·4	—	—
Bare fallow .....	432,690	351,126	81,564	23·2	—	—
Orchards‡ .....	243,008	239,483	3,525	1·5	—	—

\* Not including mountain and heath land.

† Excluding 12,801,617 acres returned as mountain and heath land used for grazing in 1904, and 12,868,240 acres in 1903.

‡ The acreage of any crop or grass grown under the trees in orchards is also returned under its proper heading.



## LIVE STOCK.

Distribution.	1904.	1903.	Increase.		Decrease.	
	No.	No.	No.	Per cent.	No.	Per cent.
Horses used solely } for agriculture* }	1,120,247	1,106,448	13,799	1·2	—	—
Unbroken horses—						
1 year and above ....	301,371	297,121	4,250	1·4	—	—
Under 1 year .....	188,618	133,585	5,033	3·8	—	—
Total of horses....	1,560,236	1,537,154	23,082	1·5	—	—
Cows and heifers in } milk or in calf .... }	2,678,680	2,588,208	90,472	3·5	—	—
Other cattle—						
2 years and above	1,874,636	1,430,625	—	—	55,989	3·9
1 year and under 2	1,429,833	1,386,136	61,697	4·5	—	—
Under 1 year .....	1,377,203	1,317,649	59,554	4·5	—	—
Total of cattle ...	6,860,352	6,704,618	155,734	2·3	—	—
Ewes kept for breeding	9,880,908	9,879,101	1,807	0·0	—	—
Other sheep—						
1 year and above ...	5,313,602	5,459,889	—	—	146,287	2·7
Under 1 year .....	10,012,664	10,300,807	—	—	288,143	2·8
Total of sheep ...	25,207,174	25,639,797	—	—	432,623	1·7
Sows kept for breeding	382,056	389,900	—	—	7,844	2·0
Other pigs .....	2,479,588	2,296,661	182,927	8·0	—	—
Total of pigs ...	2,861,644	2,686,561	175,083	6·5	—	—

\* Including mares kept for breeding.

## VIII.—Notes on Economical and Statistical Works.

*Histoire des Classes Ouvrières et de l'Industrie en France de 1789 à 1870.* Par E. Levasseur. Deuxième Edition. Tome premier, xix + ciii + 749 pp.; tome deuxième, 912 pp., large 8vo. Paris: Arthur Rousseau, 1903-04. Price 25 frs.

This new edition of M. Levasseur's standard work, first given to the public thirty-seven years ago, may be justly described, in the language of his preface, as a fresh composition written in accordance with the main outlines of a former plan. Together with a previous portion, also republished lately in an enlarged and

corrected edition of two volumes, dealing with the industrial history of France from the Conquest of Julius Cæsar to the Revolution, and a third concluding portion on the period since 1870, which M. Levasseur hopes to prepare and issue subsequently, this great book, when complete, will form a magnificent achievement, boldly planned, and consistently accomplished. As it is, in this large instalment no inconsiderable undertaking has been attempted and performed. A vast quantity of invaluable material is placed before the student, bearing on the economic history of one of the oldest and most important of European countries, in a form no less convenient and inviting than it is illuminating and authoritative. Whenever these bulky volumes are consulted on a special point, the casual reader cannot but be sensible of the erudition and the industry bestowed by their distinguished author on their original preparation and their new revision. Their continuous perusal, which the competent student of industrial history cannot without serious risk afford, and will not willingly be ready, to neglect, will probably deepen his appreciation of the easy mastery of complex and disorderly material which it is perhaps the prerogative of the French language to enable systematic writers to command in such full measure. M. Levasseur seldom, if ever, fails to enlist and hold our interested attention. The detailed arrangement of his chapters is as satisfactory as his general plan. Nor is the grouping of his facts more firm than it is lucid and convincing. No less remarkable, however, is the confidence which he compels us to repose in the range and exactitude of his knowledge, and the sureness and discrimination of his judgment.

And yet he does not hide the possibility that a bias may exert an influence on some of the opinions he has formed on some of the events which he records. For of a portion of the history narrated he was a contemporary observer, and French politics since the Revolution have been too stirring not to evoke the sympathy, when they do not challenge the dislike, of the subsequent inquirer, and, yet more emphatically, of the contemporary spectator. For this reason M. Levasseur furnishes his readers with a brief account of his own career. On the other hand it is evident that he has consistently endeavoured to banish party feeling from his narrative, and, as he remarks, the long interval elapsing between the old and the new editions has permitted some of the incidents and movements noted to be placed in a more correct perspective, and scrutinised from a more distant and detached position. The very abundance of material indeed, which gives the student of modern economic history an advantage of which the inquirer into earlier times is necessarily deprived by the paucity of evidence accessible to his examination, or even in existence, may, M. Levasseur pertinently observes, occasion a new difficulty. For an *embarras des richesses* may result. Some selection must perforce be made, and M. Levasseur is compelled by the very nature of his enterprise to aim at broad statement and large generalisation. His object differs from that of the writer of a monograph on some particular period of time or some special variety of industry. But no less sternly is his work

separated from that of the romancing novelist who emphasises the picturesque alone, for he deals with actual facts and real persons. Hence in these later times he has recourse to evidence not dissimilar in character, if its bulk be more considerable, from that employed for the earlier period described in the previous portion of his treatise. Original documents, such as the texts of laws, the proceedings of parliamentary debates, official reports and statistics, are laid under contribution. But here again, if time has brought an appreciable addition to the material which needs examination, the interval between the publication of the two editions has disclosed no inconsiderable quantity of evidence of great importance. And thus, while the plan of the work has remained unaltered, the contents of the chapters have been modified and re-arranged. In some cases, M. Levasseur states, they have been entirely recast.

The general aim and scope of the treatise are unchanged. Its comprehensiveness has suffered no restriction. The economic historian necessarily deals broadly with a number of varied topics more fully treated by other writers, and, although M. Levasseur's history is primarily a history of industry alone, and might therefore be regarded as belonging to one subordinate department of economic history, he has modified his original title by the addition of the subject of "industry" generally to that of the "working classes" alone, and he remarks without exaggeration that his history comprises in a sense several histories. Such are the history of economic legislation, the history of wages, the history of popular instruction, the history of fiscal politics, the history of the moral and physical condition of the persons engaged in industry, and the history of social ideas on the organisation of labour. To these he says that he perhaps might add the history of the "assignats," which may seem to be treated at disproportionate length. But this particular section, we think, might appropriately be chosen as an illustration of the distinctive qualities of M. Levasseur's work. It shows in a convincing manner his power of arranging a mass of intricate detail in an orderly narrative, where the distinguishing characteristics of the successive stages of a continuous development are not allowed to be concealed or confused by the surrounding detail. It exhibits in a striking guise the firm but easy grasp of guiding principles and the cool power of steady detached inspection which enable a discriminating but decisive judgment to be formed and announced on the motives which prompted certain acts, on the results which followed, and on the responsibility, intended or unintended, of different participators. M. Levasseur, as we might expect, condemns the issue of the "assignats," but here, as elsewhere, he does not bestow his blame, as he does not accord his praise, without reserve.

Similarly, although he regards liberty, assisted by science, as the note of the whole period from 1789 to 1870, contrasted with the privilege and the regulation which were dominant before the Revolution, he recognises that the State has a useful and a necessary part to play in economic action generally, and in industrial matters in particular. He is by no means an extravagant

individualist. On the contrary, he declares that the period since 1870 will require for its satisfactory treatment the close study of problems which concern the organisation of labour and the distribution of wealth. In the present volumes this judicial temper is shown not least conspicuously in the discussion of fiscal changes and in the exposition of the views of Saint Simon and of Fourier. M. Levasseur does not conceal his sympathy with a liberal fiscal policy, or his mistrust of socialistic aspirations; but he is critical without being prejudiced or unfair in his handling of both these topics. It is perhaps hardly necessary to draw attention to his qualities as a statistician. They are known wherever statistical study is actively pursued. But it may be briefly noticed how cautious this distinguished expert is in his use of statistics as material for history. He notes, for example, the comparative lack of all statistical evidence for the earlier part of the period investigated in these volumes. He does not hide his opinion of the deficiencies of the only figures which can be obtained throughout the century for some of the topics handled. He frankly states that in many, if not most, instances approximations to the truth rather than the actual facts can be reached by inferences drawn from numerical compilations. Such then is the spirit in which this great treatise has been conceived and executed. M. Levasseur's *History* is worthy of his reputation. It belongs to the rare variety of classical treatises. It is the standard history of the period with which it deals; and the new enlarged edition has but confirmed that honourable title which was won by the earlier issue. On few veterans in the ranks of learning has such a coveted privilege been bestowed as that of improving an earlier work after so long an interval; but by few, we may add, has it been so fully earned.

It is impossible in the space here available to render adequate justice to the contents of the sixteen or seventeen hundred pages of these two comprehensive volumes, but we may fittingly attempt such a brief summary of the main divisions as may perhaps serve to convey to intending readers a suggestion of the wealth of information which awaits them. Six sections deal respectively with the Revolution, the Consulate and the Empire, the Restored Monarchy, the Reign of Louis Philippe, the Second Republic, and the Second Empire. By contrast with the earlier period anterior to the Revolution two decades occupy here the space which was filled before by two or more centuries. The vast transformation which has been effected in industrial life is due, not merely to the social and political upheaval, which, beginning with the Revolution, has not yet perhaps reached its climax or spent its force, but also, and perhaps in a greater degree, to the marvellous progress of science, which has rendered man, to a far more complete extent than heretofore, the master of nature. The first of the periods considered in these volumes—that of the Revolution—is subdivided into three sections, concerned respectively with the action in industrial matters of the Constituent Assembly, of the Convention, and of the Directory. The first of the three devoted its efforts to casting the entire order of society into a fresh mould. Privilege and monopoly

of every kind were swept away and liberty and equality were established in their stead. The Convention, which succeeded, aimed at equality rather than at liberty, and busied itself with social more than economic transformation. Its performance was inferior, but neither Constituent Assembly nor Convention lasted long enough to settle French society firmly on its new political or economic basis, and both fell into the fatal error of the issue of a paper currency, convertible in name but inconvertible in fact, which led direct to bankruptcy. The Directory, which followed, was mainly occupied with a struggle against external foes. With the advent of Napoleon, and his accession to absolute authority, the work of reconstruction was attempted on a comprehensive scale. It was in a large degree accomplished; and the range over which the administrative genius of that prodigious personage extended its unrelenting energy was no less remarkable and more welcome a characteristic of his rule than the over-reaching ambition which accompanied and finally wrought the downfall of his extraordinary if not unique military capacity. He did not disdain to borrow from the older *régime*, which the Revolution had superseded, such portions of the economic framework of society as he considered to be suitable to the purposes he kept in view. The close corporations of bakers and butchers in the capital which he established are instances of this conservative or reactionary tendency. So is the monopoly of tobacco which he enforced. The survival to the present day of the spirit, and even of the details, of much of his constructive legislation affords conclusive evidence of the deep impression which his organising ability produced on French economic life. On the one hand the foundation of the Bank of France, on the other hand the Berlin and Milan decrees, which to some extent defeated their own object in proclaiming a blockade against English goods, illustrate the good and the evil which he wrought; and on the whole it seems doubtful whether under his rule French industry did more than regain the position it had lost amid the disturbances of the Revolution. With the Restored Monarchy, which forms the third period, a struggle ensued between the past and the present, and in the industrial sphere this quarrel assumed the special shape of a contest between liberty and regulation. But the substantial advantage which the period brought to France was peace. That permitted of continuous industrial activity. It encouraged saving. It allowed the safe and profitable use of capital. The advent of machinery, which was a conspicuous incident of the period, caused an increase of wealth, but introduced a new social question, and among other signs of the times were the rise into prominence of Political Economy and of Socialism, the one represented by J. B. Say, and the other by Saint Simon and Fourier. The reign of Louis Philippe, which occupies the fourth period, was marked by the substitution of the bourgeoisie for the aristocracy as the dominant class, whose economic interests were to receive the chief attention of the legislator. It was a period of great industrial progress. It saw the introduction of railways. But the development of canals was a more prominent characteristic of the times, and the legislation

of the period did not bestow any serious attention on the concerns or interests of the labouring classes. These became conspicuous in the Revolution of 1848, and indeed enjoyed almost exclusive attention in the early days of the Second Republic. The establishment of national workshops was an incident which could not be overlooked in any record of the times. But before long a reaction from these ambitious aspirations set in to less attractive if more sober commonplace; and, with the Coup d'Etat, the Second Empire replaced the Second Republic. This was a period of great economic development, when agriculture, industry, and commerce advanced with rapid strides. The speed attained was indeed unprecedented, and the second Napoleon, if, like the first, he aimed at personal rule, yet derived his power from universal suffrage, and was so far from neglecting social questions or industrial interests, that he avowedly tried to solve the former and to advance the latter. He favoured the development of industry and the extension of credit. He multiplied public works. In the second period of his reign, when his political rule was less dictatorial than before, he liberated commerce from its protectionist restraints, he bestowed on workmen the right of combination, and he assisted in the formation of co-operative societies. With 1870, which M. Levasseur describes as a turning point no less in the economic than in the political history of France, he terminates his narrative.

Such is in outline the picture of which the details fill the large canvas which M. Levasseur uses. We have perhaps indicated sufficiently the combined skill and pains with which the great task attempted is performed. As a result, we may once more repeat, a monumental book is offered for the grateful appreciation of the economic and statistical student. Its appearance in its new form may not unjustly be regarded as an epoch in the history of French economic literature. L.L.P.

*Les impôts en France.* With a Preface by J. Caillaux. Vol. i. *Contributions directes.* cxxx + 405 pp., 8vo. Vol. ii. *Contributions indirectes.* 500 pp., 8vo. Paris: A. Chevalier-Marescq et Cie., 1904. Price 15 frs.

A technical treatise giving a complete account of the administration of the taxation of a country is a luxury to students of finance and fiscal policy. How hard it is to get a complete grasp of the actual taxes in any country but one's own is known only to those who have tried. To go further than this, and find out the actual methods of administration of the taxes, is almost beyond the power of one not intimately acquainted with the official class in the country concerned. *Les impôts en France* is an account of French taxation, written by persons well acquainted with the actual working of the system, and arranged and expressed with that beautiful lucidity which can only be achieved by the use of the French tongue. If only there existed books similar to this for all the great States of the world, it would be more possible than it is at present to have a correct knowledge of foreign taxation.

The first impression which an Englishman receives on going

to France is that tobacco and matches are bad and expensive, and he speedily discovers that there is a Government monopoly in these articles; with this knowledge he is generally content to rest; but should his curiosity lead him to study the actual working of the tobacco monopoly, he cannot fail to be amazed at the minuteness of the official control of the growing of tobacco. Officials determine in which departments tobacco may be grown, and the number of acres in each department which may be planted with tobacco, and also the density with which the plants are to be grown, and the price which will be paid for the tobacco. Each person who wishes to grow tobacco has to get permission, but having obtained this he is not at liberty to grow tobacco as he likes; the dates for all necessary operations of the tobacco culture are fixed for him; the date at which the young plants are transplanted, the date of the *écimage* or removal of the buds, the date of *épamprément* or taking off the useless leaves; and all these and all the other operations of the culture are duly watched by officials. Then the land is carefully measured and the number of plants ascertained, and then the number of leaves of tobacco. All this is done before the tobacco is harvested; the actual details of the reception of each crop of tobacco, and the processes to which it is subjected, and the countings and weighings before it reaches the stage where it is manufactured by the State, are very complicated. It is indeed certain that the cost of the whole affair, both in officials and general waste of time for the cultivator, must be terrific, but that, after all, is the case with many other taxes and systems of taxation.

The number of the different taxes in France is very great, they are no doubt very burdensome, but it cannot be denied that the system is productive of a large revenue. The real question is, what is the cost? Would it not be possible to raise an equally large revenue to the State at a very much smaller real cost? Thus, in place of an income tax we have an *impôt foncier*, an *impôt personnel-mobilier*, and the tax on businesses (*impôt des patentes*). Let us pause for a moment to consider the last of these. Professions are divided into three classes, A, B, and C. In A we find most ordinary wholesale or retail businesses. To find the tax we have to determine the nature of the business and the population of the place where it is carried on. There are eight classes of businesses, each of which contain nine different sub-classes of population. Thus consider a grocer at Toulouse; we have to find which class he belongs to (to do this we must see if he is a wholesaler or retailer, or both), and then find the duty corresponding to this class and to a population equal to that of Toulouse. In B we find various special professions or businesses, bankers, omnibus proprietors, *grand magasins*; here the tax depends on the profession, the population, and generally the number of persons employed. Thus in a town with a population of more than 100,000, the proprietor of a big shop dealing in five different classes of goods will pay a tax composed of five special taxes, each of which depends on the population and the number of employés. He will also pay 25 frs. per head for the first hundred employés, 35 frs. per head for the

second hundred, and 45 frs. per for the third hundred. [If the population had been less, then taxes would have been less.] Under C we have persons engaged in manufactures; here the tax depends on the nature of the manufacture and on the size of the business, determined by various tests; thus a hat maker's tax depends on the number of his workmen, a brewer's on the capacity of his boilers or vats. In addition to all this there is a further tax based on the value of the dwelling house and business premises of the business man; the details for this are given in table D; for members of class A it varies from one-twentieth to one-fiftieth, for class B it is one-tenth, for class C it varies from one-tenth to one-sixtieth; professional men, such as doctors and lawyers, do not figure under A, B, or C, but come into table D, and generally pay one-fifteenth. This system is clearly very complicated, and cannot in practice work out very fairly. The income tax, in spite of all its imperfections, appears to be both fairer and simpler; further, the *impôt des patentes* must be very costly to collect. This extreme complexity of detail appears to be a characteristic of French taxation; thus in the stamp duties we find minute scales which contrast unfavourably with the English Stamp Acts, bad as they are. The English stamp duties are, roughly speaking, either small and uniform, as a penny for a receipt over 2l., or sixpence for an agreement; or *ad valorem* at a rate according to the nature of the transaction, as 10s. per cent., on the purchase money for a conveyance or sale. In France there are five sizes of stamped paper, which must be used for certain classes of transaction, but these to a great extent correspond to the stamp duties in England payable in legal proceedings; the *ad valorem* stamp duties do not present any special features, but the stamp duty on posters is interesting, because proposals for the taxation of advertisements are frequently made in this country. Ordinary posters placarded up in a public place pay a stamp duty according to size; advertisements painted up pay a tax which depends both on the size and on the population of the commune in which it is. There seems no reason to suppose that this duty is expensive to collect; it is not easy to understand why it has never been tried in England.

The taxation of alcohol is a feature common to the financial systems of all civilised countries; in France it has given rise to peculiar difficulties, partly due to the desire of the legislature to encourage *boissons hygiéniques*, partly due to the privileges which are accorded to persons to produce a little alcohol on their own account for themselves. These *bouilleurs de cru* are a perpetual difficulty; recent legislation has not been altogether successful in dealing with them. It is as yet too soon to say definitely whether the law of 31st March, 1903, will be successful. In the first place, it establishes a careful control over all apparatus used for distilling; this control is elaborate, and is likely to be successful. In the second place, it attempts to determine by the value of the apparatus whether it is likely that the person owning the apparatus will distil in the main only for his own consumption. The authors are of opinion that this will be unsuccessful.



The fact that the French system of customs duties is not imposed merely for revenue purposes, but rather for protective purposes, is familiar to every one, but more exact knowledge of the French customs system is not very widely spread. From 1860 to the 11th January, 1892, there existed, first, a general tariff passed by the Chambers which applied to countries which had no commercial treaty with France; secondly, a conventional tariff which gave the duties fixed by the commercial treaties with separate countries; since these treaties contained the least-favoured nation clause, a concession granted to any nation became a concession to all other nations having commercial treaties. Hence the conventional tariff is the result of a series of commercial treaties. The Chambers had no control over these treaties of commerce, and hence with the growth of the protectionist movement the Government were compelled to denounce the commercial treaties. But without some power of making commercial treaties it was thought that French commerce would be hurt. Hence the device of a general tariff and a minimum tariff was adopted. The minimum tariff is applied to the products of nations who make corresponding tariff concessions to France; the general tariff is applied in all other cases. Thus the minimum tariff differs from the conventional tariff in the fact that it is discussed and passed by Parliament, and can at any moment be altered by Parliament.

In addition to the ordinary customs duties there are *surtaxes d'entrepôt*, or duties on extra-European products imported from a European country, and *surtaxes d'origine*, or duties on European products imported from a country other than that in which they are produced. In one respect the law imposing customs duties is singular; it specifies (1) articles which are prohibited, (2) articles subject to duty, (3) articles exempt from duty; if an article arrives which is not in one of these classes, the customs house officials put it into one of these classes by analogy. This, in effect, gives a power of imposing taxes to the officials, a result which is most surprising to an English lawyer.

Octrois have been abolished in England: they flourish in France. They are taxes imposed by communes on articles consumed within the commune. They are not local protective duties. The powers of the communes to impose them are restricted; only certain articles may be made subject to an octroi; the maximum duty which may be imposed depends on the size of the commune. A municipal council wishing to establish an octroi, has to choose the articles it wishes to tax from amongst those specified in a decree of 1870, and adopt for each a duty not greater than the maximum presented by that decree. Some articles may not be taxed, because they are of prime necessity, such as flour or dry beans, others because, like sugar and coffee, they are already taxed by the State, and an octroi would lessen the produce of the State tax by reason of the diminution of consumption.

Those of the readers of this *Journal* who read M. Yves Guyot's paper on sugar bounties, would do well to supplement that, so far as it relates to France, by the brief account here given. In 1843 the

Colonial sugar planters were complaining so bitterly of the competition of beet sugar (which was exempt from taxation), that it was proposed to prohibit all manufacture of beet sugar in France. This seemed a wild proposal, but who, in the light of the past fifty years, could venture to say that it might not have been more beneficial to France to have suppressed beet sugar, than to have wasted millions in bounties to sugar refiners?

The questions of interest raised by this book are very many, as the above observations have indicated, but it must not be thought that all the points of interest have been exhausted; far from it: shall we tax bicycles? is a common question. We can turn to France and discover how a tax on bicycles actually works. Shall we encourage cod-fishing? Again we have an illustration; in fact, the variety of the French system is very great and most instructive. It involves an enormous army of officials, an immense amount of official supervision, an immense amount of Governmental interference; but to many these are no great objections. Those who like bureaucracy will envy France. The value of this book is greatly enhanced by a preface of 150 pages by a former Minister of Finance, partly historical and partly critical. In particular the observations on the French protective system are of special interest at the present moment, as coming from an expert who is familiar with every detail of the actual working of that system. C.P.S.

*Die Schwankungen der landwirthschaftlichen Reinerträge, berechnet für einige Fruchtfolgen mit Hilfe der Fehlerwahrscheinlichkeitsrechnung. (Ergänzungsheft viii. Zeitschrift für die Gesamte Staatswissenschaft.)* Von Dr. Alfred Mitscherlich (Kiel). viii + 120 + 2 pp. Tübingen, 1903. Price 4s. 3d.

In this pamphlet an attempt is made to reduce to scientific measurement the variations year by year of the net proceeds (in marks per hectare) of certain methods of cultivation. It is of considerable importance, both from the theoretical and practical standpoints: theoretically, because it gives new and interesting applications of the theory of probability, whose scope is now continually being extended to fresh regions; practically, because it gives a means of combining and measuring the many uncertainties which are inseparable from agricultural industry, making possible a calculation of the reserve capital or of the amount of insurance, necessary to meet probable contingencies.

In the first part of the pamphlet the author endeavours to show that the normal law of error is applicable to the rates at which men and carts move, to rates of wages in different places, to the produce per acre year by year of various crops, and to their market prices. On these premises he assumes that the variations in each of the numerous constituents, which must be considered before the net returns can be estimated, are to be measured by an appropriate probable error, and that these probable errors can be combined by the ordinary mathematical processes. Thus he obtains such a result as the following: if land is in three successive years prepared with lupine, sown with rye, and then with oats, the net return per

hectare is  $20.9 \pm 41.9$  marks, i.e., if all the costs and yields are average, the return is 20.9 marks, and in a long series of years (if there was no change in prices or conditions) this sum would be the average obtained; but that owing to the variations in the yield of the crops, the market price and so on, the net return is subject to a variation in excess or defect, whose measure by a chosen standard is 41.9 marks (the so-called "probable error"), and with the help of a table it can be seen that the chance of making as much as 21 marks is one-half, of making as much as 63 marks is one-fourth, of making less than nothing is three-eighths, and so on.

Given the necessary facts and assuming the premises, it is clear that such a statement is of very great value, and much more precise than a mere calculation of the average, without any means of estimating the likelihood of making a large profit or of sustaining a heavy loss. A prudent man, with little reserve capital, will wisely turn his attention to those crops where the "probable error" of the yield is small. In short, we have here a means of measuring the element of speculation involved.

No doubt, as information accumulates, a calculation of this kind can be put on a sound basis and its results tested by experience; but in the work before us certain defects appear alike in method and argument which diminish the accuracy of the measurement, though the result is still a valuable rough approximation to a useful test.

In the first place the comparison between the data (men's speed, harvest returns, and prices) and the normal curve of error is made on a faulty principle. The method adopted is as follows: the rates at which 100 men walked were measured, the average taken, and the hundred differences from it calculated. The probable error was taken as  $0.845$  of the sum of the differences divided by  $\sqrt{n(n-1)}$ , where  $n$  is the number of observations (100). The observations were then tabulated as follows<sup>1</sup> :—

*Number of Observations which Differed from the Average (in Excess or Defect) by not more than*

	Of the Probable Error							
	0.2.	0.4.	0.6.	0.8.	1.0.	1.2.	1.4.	1.6.
(a.) Observed .....	11	22	32	43	53	57	68	73
(b.) Calculated .....	10.7	21.3	31.4	41	50	58.2	65.5	72

	Of the Probable Error							
	1.8.	2.0.	2.2.	2.4.	2.8.	3.2.	3.6.	4.0.
(a.) Observed .....	77	81	86	88	94	96	98	100
(b.) Calculated .....	77.5	82.3	86.2	89.5	94.1	96.9	98.5	99.3

<sup>1</sup> The table is abbreviated from the original, Digitized by Google

Lines (a) and (b) are then represented on squared paper, where they are in close agreement, and it is found that the space contained between the two lines is a very small fraction of the total area enclosed by the curve. Much of this agreement is, however, produced by the method employed, as may be seen from the following table, which compares the same observations with the normal curve:—

Between				Observed.	Calculated.	Observed in Corresponding Limits on Negative Side.
Average +0.2r*				3	5.3	6
Average	+0.2r	and	„ +0.4r	4	5.3	9
„	+0.4r	„	„ +0.6r	6	5.1	4
„	+0.6r	„	„ +0.8r	6	4.8	5
„	+0.8r	„	„ +1.0r	3	4.5	7
„	+1.0r	„	„ +1.2r	3	4.7	1
„	+1.2r	„	„ +1.4r	3	3.7	5
„	+1.4r	„	„ +1.6r	4	3.2	4
„	+1.6r	„	„ +1.8r	4	2.8	0
„	+1.8r	„	„ +2.0r	2	2.4	2
„	+2.0r	„	„ +2.2r	2	2.0	3
„	+2.2r	„	„ +2.4r	0	1.6	2
„	+2.4r	„	„ +2.8r	3	2.8	3
„	+2.8r	„	„ +3.2r	1	1.3	1
„	+3.2r	„	„ +3.6r	1	0.8	1
„	+3.6r	„	„ +4.0r	.2	0.4	0
Above	+4.0r			0	0.3	0

\* r is the probable error.

The curve representing these figures is now neither regular nor symmetrical, and it is obvious whether the correspondence with the curve of error is close or not. Applying Professor Karl Pearson's test, we find that the chance that so great a divergence would be shown if the observations were random samples from a group defined by the normal curve selected is between 0.4 and 0.9. It may perhaps be admitted that the curve of error is a reasonable approximation to the observed group. The author does not give us the means of applying this test to the other groups without considerable arithmetical work, while his test, which pays no attention to asymmetry or to the total number of instances, is obviously imperfect. So far as can be seen at first sight, the probable error does form a good measure, but careful investigation is necessary before we can accept it in the case of the observations relating to a sequence of years; while the probable error of the probable error itself is considerable when, as is the case of the second part of the book, only ten observations are to hand.

Again, it is hardly admissible to assume the rate of *working* is subject to this law simply because the rate of *walking* is. Innumerable other factors enter, and it may well be that a curve representing the products of different men paid by piece would be a highly unsymmetrical curve.

A more serious practical objection is that no attention is paid to possible correlation between the variations of the various factors involved. In the original calculations of the probable error it may be well doubted whether the observations of prices at various places at the same and at different dates are uncorrelated. In the estimates of net produce there must be considerable correlation. An intelligent farmer will buy his raw material at the time of favourable prices; he will get more out of his men by better supervision and arrangement of work, he will cause the variations in the different factors to neutralise one another; again, there is the natural compensation which tends to equalise farmers' profits year by year, by the existence of a high price when the supply is short, and *vice versa*. From such considerations it would seem that the calculated probable error for the net proceeds may be too large.

These uncertainties are increased by the great number of operations necessary in combining seriatim the probable errors in the various factors. These are performed by the formula

$$R^2 = \left( \frac{dF}{dx_1} \cdot r_1 \right)^2 + \left( \frac{dF}{dx_2} \cdot r_2 \right)^2 + \dots$$
 where the quantity to be measured is  $F(x_1, x_2, \dots)$ , and  $r_1, r_2, \dots$  are the probable errors for  $x_1, x_2, \dots$  &c.; this depends on the continued neglect of quantities of the second order of infinitesimals. It would be more satisfactory to take the elements at a later stage of composition, and, in fact, to obtain actual records of the net proceeds and examine their variation.

It is not proposed to criticise the work from an agricultural standpoint. The careful calculations and tables of the *average* returns and outgoings may be of considerable interest to agriculturists, but it should be remarked that insufficient attention appears to be paid to the state of the soil after various crops have been reaped. It is assumed, for example, that the crop of rye is as great annually when it is sown three years in succession, as when it follows immediately after a year's preparation with lupine.

While we accept the results with some hesitation, and are not fully satisfied with all the details of the methods, we welcome this book as a valuable addition to the literature of probability, as a clever and industrious compilation of difficult material, and as very suggestive of much further work that can usefully be done.

A.L.B.

*Grundriss der Allgemeinen Volkswissenschaftslehre.* By Gustav Schmoller. Part ii. x + 719 pp., 8vo. Leipzig: Duncker and Humblot, 1904. Price 17s. 8d.

The completion of Professor Schmoller's book is a fitting moment to consider the author's views as to the nature of the science of political economy. It was necessary that such a determined enemy of deductive methods should show how scientific results can be arrived at without the use of that method, which consists in deriving conclusions by logical deduction from well-established premises. If the rival method is to be inductive, the treatment will probably be statistical; if both induction and deduction are cast to the winds,

there is a danger that the science may become theological in its nature, and that it will consist of statements alleged to be true by the author, for which no adequate proof is given. The most extreme opponents of Professor Schmoller will probably say, and not without some truth, that his book is tinged with this theological treatment. The learning of Professor Schmoller is immense, his historical knowledge is so great that only specialists should attempt to criticise it, but this book does not profess to be merely history, and it is not merely history; it should be economics treated from the positive point of view, yet it sometimes degenerates into what after all is little better than good journalism. This may be illustrated by an example. We are all greatly interested in the Fiscal problem raised by Mr. Chamberlain. An independent study of the probable effects of Mr. Chamberlain's proposals by an independent foreigner would be of great interest to Englishmen. Such a study would consider the economic and political consequences likely to follow from preferential tariffs and protective duties based upon a careful study of the actual existing conditions, with correct reasoning applied to these conditions: it must also be based on the study of the effects of such duties and tariffs in other countries; the well-being of the working classes, who form a majority of the population, would in particular be studied with great care. All available statistical evidence would be called into play. What do we find—first, that the author sometimes talks of a “Reichszollverein,” whereas Mr. Chamberlain's proposals are, as everyone knows, something quite different, namely, preferential tariffs within the Empire, and protection for the British Isles. Secondly, that there is no consideration of the effect of Mr. Chamberlain's proposal worked out in any detail, but merely a few journalistic phrases about “so-called Imperialism,” “threatening small States,” “Englische Herrschaft,” and so on. Mr. Chamberlain himself is described as “agitator grössten Stils.” No doubt many of Professor Schmoller's observations are shrewd, some of his prophecies may come true, but if this book is meant to free economics from false abstraction, as the author states in his preface, he has given a powerful object lesson in favour of deductive economics. The truth is, of course, that Professor Schmoller has done justice neither to himself nor his cause. The difficulty of compressing all his learning so as to give a general view of the subject, but without general abstract principles, has proved too great. The book remains deeply interesting as a series of generalisations based upon history, with some statistics interspersed. It is the exact converse of Professor Flux's book reviewed below, and from a scientific point of view inferior to that work, in spite of the vast learning of its author.

This second volume contains the third and fourth books of the whole treatise, and of these the fourth book is the more interesting, as it discusses industrial crises, *Klassenkampf*, and *Handelspolitik*. As to the first of these then, it still remains true that there is very much to be learnt. The deductive method, at any rate, has not thrown much light on crises. But there is room for much study, largely of a statistical nature, of the actual course of events

in crises. Professor Schmoller gives a good generalised account of the various stages of activity and depression, but he does not throw much new light on the problem. It would have been worth while to have considered, for example, how far the development of the joint stock company system has led to greater publicity and greater knowledge of the actual state of businesses by reason of the better and regular auditing of accounts, and how far this may have tended to produce depression rather than crises. *Klassenkampf* is a subject of which but little is known in England, probably owing to a liberal political system, and for this reason it is all the more necessary that its existence in an acute form in some countries should not be overlooked. Commercial policy or *Handelspolitik* is a phenomenon we almost thought we had got rid of, but evidently we have not, and it is to this section that the reader naturally turns at the present time. The really serious defects in Professor Schmoller's treatment are, first, that he regards business as a warfare, whereas the analogy is in many very important respects a bad one; secondly, that he does not make a careful enough definition of what is meant by national progress, nor determine which are the best statistics for measuring it. Unless we know what kind of prosperity a nation is endeavouring to achieve by a particular course of commercial policy, it is not easy to test the effectiveness of the means for procuring the end. This consideration is important, because it is rare for Governments to adopt a commercial policy with a clear end in view; in fact, the political powers of different groups of persons may result in a policy being adopted which is not nicely fitted to achieve any particular aim. Thus in the case of Germany, some persons wish Germany to remain an important agricultural State, and for that reason advocate high protection for agriculture, though this tells on the industrial development to the dwellers in towns; others wish it to become an industrial State, and thus wish protection for industries, even though this may press on the dwellers in the country. Both of these policies are intelligible, but a combination of the two achieved by a combination of political groups can only be defended if some third and different aim is in view, as, for example, to diminish foreign trade relatively to home trade. It certainly seems as if Professor Schmoller attributed too much of a government's policy to far-seeing statesmanship and too little to the political exigencies of the case. One criticism of detail cannot be passed over, namely, that Mulhall should never be cited unless the sources from which his figures come are known.

C.P.S.

*Economic Principles.* By A. W. Flux. .xxx + 324 pp., 8vo. London: Methuen and Co., 1904. Price 7s. 6d.

Professor Flux has achieved an extremely difficult task with the most conspicuous success; he has written an introductory study to economics, which is not only clearly and easily expressed, but which does not attain lucidity and apparent ease at the expense of accuracy. It is evident at once that no one whose mind had not received that training which the study of mathematics alone can

give, could have succeeded in such a task, but it requires much more than the complete knowledge of the dry bones of economic theory to enable any writer to write an elementary book which is so readable as this is. The student's attention is held by the closeness of the reasoning, and his mind is led on from point to point, step by step, in such a way that difficulties are surmounted by the easiest road. A further very great advantage which Professor Flux's book possesses is, that it does not, as is the habit of some elementary writers, state the elements and ignore the difficulties and refinements; on the contrary, the difficulties are indicated, and the most entrancing problems are suggested to the student who is making a more advanced study of the science; thus the concluding paragraph of the chapter on Values in International Trade is in these words: "One feature in the two cases not specially examined above calls for attention, namely, that when the volume of imports changes, an important consideration is, whether they are affected by increasing or decreasing returns as a whole or by constant returns? The investigation of the various cases which can arise is not easily made without some symbolic logical apparatus, and is even then somewhat lengthy. The purpose of calling attention here to a problem whose complete solution can hardly even be indicated, is to afford opportunity for noting that, though the general conditions point to loss to a country as resulting from any causes which diminish the effectiveness of its industry, conditions are conceivable where a gain would accrue." Such a statement as this cautions the elementary student against being too positive, and thinking he has got to the bottom of the difficulty, and encourages the more advanced student to attempt to solve the special problems here indicated. The most serious objections to the elementary treatment of economics, and it applies, perhaps, less to Professor Flux's book than to any other, is that statements have to be made without the full proof being given. Thus, after describing a barter of apples and plums between two individuals, the author continues: "There is some one rate which differs from all others, in the fact that when all exchanges have been made which the bargainers are willing to make at that rate, there is no other rate at which they are willing to make any further exchanges. If they can hit on this rate at the outset, it will be the rate which holds till they cease exchanges." It is rather too much to ask the reader to take this on trust, and the beginner is hardly likely to be able to prove this for himself. Occasionally, again, the author makes some general statement which might be contested, such as: "In general, elasticity of demand is great when prices are low, but it may not always be small when prices are high. It may reach a minimum figure at some intermediate price level, and again become great at high prices." The implications contained in this are very far-reaching, and it would require a great deal of statistical evidence to verify the general proposition. But such statements only inspire the student to further efforts to master the subject. The general arrangement of the book is as follows: after an introduction, demand and value, exchange and markets, and supply and value are treated in



successive chapters, followed by a chapter on some special problems of valuation; then come chapters on interest, rent, wages and profits; then on money, paper currency, followed by the chapters on international value and the foreign exchanges. The last three chapters are on free trade and protection, Government interference, and the incidence of taxation. There is a most useful appendix on problems touched analytically and diagrammatically, which briefly mentions Auspitz and Lieben's method of diagrams, Wicksteed's theory of distribution, and a diagrammatic method of treating the problem of rent which first appeared in the pages of this Journal. The table of contents is made useful by containing references to English and American books at the heading of each chapter. The excellence of the book cannot be fairly described in a short comment; the fundamental importance of the theory of value is never lost sight of; as already observed, difficulties are not shirked, but, on the other hand, what is easy is not made artificially difficult, as a comparison with the page or two explaining Wicksteed's theory of distribution with Mr. Wicksteed's book will amply demonstrate. If Professor Flux can lecture as well as he can write, his pupils should indeed deem themselves fortunate. C.P.S.

*General Report on the Census of England and Wales. (C. 2174.)*

The interest of the final report on this census in the eyes of the general public cannot but be considerably diminished by the publication of a preliminary report setting forth in considerable detail the general results, along with a full and explicit comment upon their relation to the corresponding figures of the preceding enumeration. On the present occasion, moreover, the innovation, a very salutary one it is generally thought, of issuing the complete set of tables for each county in succession, according to its aggregate population, gave the opportunity of detailed examination to those who regard these results from the practical standpoint of local utility. The compilation of summary tables took the wind still more out of the sails of the general report, so that the latter comes before the public handicapped by the comments of specialists in the various branches of information dealt with in it, who have all had their pickaxes into the raw material before it was sorted and classed by the officially authorised agency.

Nevertheless, the broad and comprehensive exposition, given by the letter in the volume now presented, loses none of its value in the eyes of experts from the piecemeal treatment its subjects have already received, much of which, indeed, must have been of service to the authors in their analysis and explanatory review. The work itself is considerably larger than most of its predecessors, not only by reason of the greater detail in which the statistics are scrutinised, but also from the larger space allotted to historical summary. At the beginning a valuable *résumé* is made of the evolution of the census operations from the year of the first organised enumeration in 1801. It shows the gradual improvement in method as well as the extension of the scope of inquiry. The defects in one census

were to some extent obviated in the next, and after passing thrice through the master-hand of Dr. Farr, his successor, Dr. Ogle, on a review of the whole field, placed the operations upon their present basis. Fault is still to be found, no doubt, with a good many of the methods, but it is scarcely open to question that the remedy cannot fairly be sought within the walls of Somerset House, but is inherent in our national system of "trusting the people" rather than the continental practice of trusting mainly to official agency in the collection and verification of the intimate details involved in such an inquiry. It is fair, however, to take the opportunity of reiterating the consideration this Society has so often pressed upon the attention of the Government, that the census suffers, financially and statistically, from not being supplemented by an enumeration of a simpler character at five years from each general operation.

A good deal of space is given in the report to one of the chief difficulties in the compilation of the figures for this part of the United Kingdom, viz., the number of overlapping and subsidiary areas for which it is necessary to furnish information of a more or less detailed character. A glance at page 14 is enough to indicate what this means. Ancient counties, administrative counties, county boroughs, county court circuits, civil parishes, ecclesiastical parishes, urban, rural, registration, parliamentary, petty sessional, Sodor and Man, with the crowning mercy of the exclusion of the Scilly Isles, which "do not strictly constitute an administrative county," though administered as if they did! Not only do these divisions exist, but they manifest the added malignity of fluctuation. For instance, 883 civil parishes were added to the number in the ten years, and 1,308 underwent change of area. Only 164 urban districts were created, and, in compensation, 53 were dissolved, but the result was the same to the Registrar-General, whose staff had to employ the intercensal period in re-compiling the figures of the last census to facilitate comparison with those of the next.

In the more strictly statistical portions of the report it is noticeable that the analysis of the more important subjects has been carried deeper and wider than usual, and that in some cases, such as those of age and marriage, the aid of collateral sources of information has been utilised in the elucidation of points which upon former occasions have been subjected to most criticism. The nature and extent, and even the probable motive of the misstatement of age are instances in point, to which may be added the interesting comparison with the marriage registers of the respective ages of husband and wife at the time of marriage, as well as their civil condition—indicating in the latter, though not numerically, the proclivity of widows for bachelors younger than themselves, and the increasing disposition on the part of the up-to-date Wellers to increase the disparity in age between themselves and their second ventures.

No less than 60 pages are devoted to the subject of occupation, including those dealing with the historical aspect of this branch of the census. Every effort appears to have been made to secure a record as complete and accurate as the nature of the procedure

allows, and the Registrar-General is of opinion that the result has been comparatively successful. It is worthy of note that much greater attention than before was given to the preliminary instruction of householders and others who had to fill in this column of the schedule, and that both the Educational department and the Board of Agriculture lent their aid in this respect. That there will be no fault-finding in regard to the final results is beyond hope. It is inherent in the subject, but it is something to find that the changes in classification, always a bone of serious contention, have been adopted, not by the Registrar-General, *proprio motu*, but in deference to the views of the Home Office and Board of Trade which compile statistics of their own, to which those of the census act, or should act, as the touchstone. The census authorities manifest "no great expectation that the result will prove satisfactory," and back their opinion by their experience in 1896. It is no new remark that such detail ought not to be expected from a synchronous enumeration, especially when the column is filled in by other than trained official agency, but is obtainable, with, if not complete, at all events greater accuracy, through special investigation spread over a reasonable time.

In the return of birthplace, nativity has been supplemented by the somewhat alien factor of nationality, and the improved instructions issued appear to have reduced the number of foreigners, or non-British subjects. Similarly, the extrusion of the Welsh infant from the return of language in the Principality has reduced the proportion of those who speak Welsh only by one half, a gratifying testimony to the garrulous nationalism of young Wales.

Finally, the compilation of statistics for the United Kingdom is accompanied with comparisons in the text between the three countries, which is convenient to those who wish to be saved the trouble of research into the different volumes separately published; and the tables for the Empire, meagre as they are, indicate a growing recognition of the necessity for further advance in this direction, until a succinct view of the composition of this vast congeries of races and conditions may be placed within the reach of those who can best profit by the knowledge.

On the present occasion only the construction and scope of this valuable report have been mentioned. The statistics and their lessons will be dealt with later.

J.A.B.

*The Supplement to the 37th Report of the Registrar-General of Ireland for the Years 1891-1900. Price 1s. 8d.*

From Ireland, as from Africa of old, we are always expecting something new, even though the novelty may not in all cases be induced with the additional titillation of surprise. The clear and business-like supplement to the Registrar-General's 37th Report well fulfils the expectation, and in the statistics of births, deaths and marriages therein set forth much will be found of interest and serious import. The review in question surveys in detail the field covered by the ten years ending with 1900, but the general table

with which it begins includes the main figures for the country as a whole from the commencement of registration, in 1864. There was then a population of 5,640,000, which declined continuously, though at varying rates, to 4,468,000, or by nearly 21 per cent. If, however, the island had had to rely upon no other factors than births and deaths, its population would have been 23 per cent. greater in 1900 than in 1864, since, in despite of a decreasing birth-rate and an almost stationary mortality, the excess of births over deaths was 9·8 per mille in the first seven years, 8·2 in the seventies, 5·4 in the eighties, and 4·8 in the last period dealt with in the report. But this natural increase was outweighed by emigration, which took place to the extent of over 15 per mille in the sixties and eighties, and of 9½ per cent. in the nineties. The actual figures should, perhaps, be quoted, as the decline in population tends to make the ratio less impressive, so it may be put that in the sixties about 85,000 persons annually left the country, and in the nineties, about 43,000, and, out of 2,700,000 emigrating in the thirty-seven years, only about 214,000 had returned to be enumerated in their native land at the close of that period. Birthplace is, admittedly, but an imperfect indication of migration, but it is worth noting that at the last census more than 426,000 natives of Ireland were enumerated in England, and only 77,000 persons born in England were enumerated in the sister island. This disproportion moreover was, as it seems, considerably less than any recorded from 1861 downwards. Emigration, however, is outside the scope of the material under review, and it is only the natural increase, with its distribution and fluctuations, that claims attention. In Ireland we may confidently take the marriage-rate as the starting-point, not that of births, since there are few countries, if indeed, any, so little obnoxious to the somewhat defamatory charge made by Talleyrand against certain people further south, who ought to have known better, that "*souvent l'héritier vient avant le mari!*" Out of a thousand births during the period with which we are dealing, only 26 took place out of wedlock, as compared with 42 in England and about 70 north of the Tweed. Along with the high relative morality in this respect we find a marriage-rate by far the lowest in western Europe. In the sixties this rate averaged 5·3 per thousand of the population, but gradually declined to about 4·3 till after 1895, when it showed, like that of England and Scotland, a perceptible revival, spread over the whole country, though it does not seem to have been maintained in any one of the three countries beyond 1900. As in England, the highest rates are found in the urban districts, which include, in Ireland, all centres of more than 10,000 inhabitants. In these the rate ran to 6·5 per mille, against 4 in the rural tracts. The cities of Belfast, Dublin, and Cork returned rates of 8·2, 7·2, and 6·3 respectively, whilst in the neighbouring country the corresponding figures were but 4·6, 4·2, and 3·7, and in the fourth province, Connaught, only 3·4. The same tendency is observable in the returns for England and Wales, where the rate in the mining and manufacturing districts is considerably above that

prevailing in the purely agricultural counties. In Ireland, moreover, the factor of religion is introduced, but it no doubt coincides too closely with geographical distribution to be a very distinctive landmark. For example, exceptionally high rates prevail in Ulster, and amongst the non-Roman communities that predominate there the rate is 6 per mille, whilst among the members of the Roman Church, to whom 68 per cent. of the marriages are credited, it is only 4·4. On the other hand, several urban centres of considerable size are found in the former province, so that the high rate may be fairly attributable to the influences which seem to be operative nearly everywhere in raising this rate, in which case the prevalence of a particular shade of religious faith recedes into the background as the *causa causans* of marked connubial proclivity.

Reverting for a moment to the question of illegitimate births, it does not appear from the statistics under review that this phase of immorality is diminished in Ulster by the greater prevalence of marriage or the earlier age at which it is contracted; nor, on the other hand, is it increased under the remarkably low marriage rate in Connaught with the comparative rarity there of marriage amongst minors of either sex. In the former, with a marriage rate of 7 per mille in the towns and 4·6 in the country, there are 38 illegitimate births per mille in the one, and 37 in the other. In Connaught the marriage-rate in the towns is less than that in the rural parts of Ulster, whilst the rate in the country is no more than 3·4. There has been, also, a decline in the proportion of minors marrying, which of late years seems almost startling. Nevertheless, only 10 births in 1,000 were illegitimate in the towns and 6 in the country. It seems clear, then, that there is not in Ireland, except perhaps in Ulster, the tendency observable to some extent in England and markedly in Scotland, for illegitimacy to be more prevalent in the exclusively rural tracts than in the large towns.

As regards the legitimate prolificity of the population, it seems that the average number of births per marriage has remained almost stationary at about 5·3 for the greater part of the 37 years, with a slight tendency towards 4·6 during the last ten years. It may be noted in passing that in England also this rate fell from 4 to 3·5 in the same period. The rate in Ireland is throughout higher in the rural than in the urban districts, and in the three large towns it falls well below the general average. Connaught is again to the front with over 6 per marriage, and the rural parts of Munster reach 5·7. It is in these tracts that, as just mentioned, the marriage-rate is the lowest, and so, it may be observed, is the birth rate. It amounts to this—that those who enter into matrimony are comparatively so few that, though they fill their quivers, the aggregate result of their efforts is not equal to the individually lighter contribution of their more connubially disposed compatriots in the north.

The Registrar-General points out that the proportion of births per marriage varies with great regularity inversely as the death-rate, and that this feature is most strongly brought out in the contrast between the rural and the urban districts throughout the country.

A similar relation seems to exist to a smaller extent between the fertility per marriage and the birth-rate, and where the number of births per marriage is large, the birth and death-rates have a tendency to be low.

The general birth-rate appears to have oscillated fairly closely round 23 per mille from the year 1882 downwards: previous to that year it ranged from 28 to 24. Its course has thus been in general harmony with that found of late years in most other European countries, though in none but France has it maintained so low a level. It is in accordance with general experience, too, that it should be higher in towns and industrial centres than in the country. Ulster again heads the list with Belfast, where the birth-rate was nearly 33 per mille during the last ten years. The corresponding figures for Dublin and Cork were 28 and 24. The rate in rural Ulster, however, was only 21·3, the same as in rural Connaught, and in the rest of the country, outside the towns, the rate did not reach 22 per mille.

The death-rate, though it has fluctuated within comparatively small limits, has not pursued a regular course, either upwards or in the reverse direction. In the sixties it was about 16·6 per mille, and towards the end of the seventies rose to 19. Since then it has closely approximated to 18, with waves of a few years' duration above and below that figure. The towns, with 22 per mille, raise, as usual, the general average, which was 16·5 in the country districts, to 18·2. "Dear, dirty, Dublin" stands in bad preeminence with a rate of 26 per mille, and Belfast comes next with 23·4.

Even in the rural districts of Leinster and Ulster the rate is more than 1 per mille above the rural rate for the whole-country. At the other end of the scale come the five counties of Connaught, with the low rate of 14 per mille. Munster, the fourth province, has only 16 per mille in its country districts, but returns 21 in its four towns. The natural increase is, by coincidence, 4·8 per mille in the aggregate of both classes of district, but it is the result, in the rural division, of a birth-rate of 21·3 against a mortality of 16·5, whilst in the urban section a birth-rate of 26·7 has to bear the weight of a death-rate of 21·9. Among the former districts those of the south head the list, Connaught, with an excess of births amounting to 7·2 per mille, and Munster with 5·7. In the case of urban districts, Ulster displaces Connaught from its lead, with an excess of 7·7, while the small towns of Connaught return but 5·7 per mille. Leinster occupies the lowest place in both divisions, with 2·8 in the rural and 2·3 in its urban tracts. These rates are in striking, and from a general standpoint, melancholy, contrast to those prevailing during the same period in the rural parts of England, where the death-rate was almost identical with that of rural Ireland, but the birth-rate far higher than that to the west of St. George's Channel. Then, again, it should not be forgotten that the tracts which show the highest natural increase in the latter are the very ones from which the supply of emigrants is mainly derived.

It is to be regretted, perhaps, that amid all this wealth of

information the mortality among infants and young children, generally considered the touchstone of the sanitary conditions of a community, receives no more than bare mention in the report. The rates quoted, moreover, seem interesting, if only from the favourable contrast they present to those in the return for England. In the first year of life 104 deaths to 1,000 births, whilst the corresponding figure in England, although it fell to 133 last year—the lowest point touched since 1881—has been almost stationary at 154 for the last sixty years. Taking the first years of life together, the mortality in Ireland was 38 per mille, but in England 57. There is here, apparently, the foundation of a population of at least the average, if not better than the average, health, nor do the rates recorded for the later years compare unfavourably with those for England, making allowances for the drain of emigration between the ages of 15 and 35, and excepting the old women, who do not seem to come up to the reputation for toughness which they usually enjoy in the eyes of the student of these statistics. For the rest, Ireland seems to marry at a ripe age, to breed with moderation and to die likewise, “instead of which,” as the Judge said, they leave the country.

J.A.B.

*Twelfth Census of the United States. Special Report: Employees and Wages.* cxv + 1228 pp., 4to.

This very bulky volume is mainly remarkable from the point of view of statistical methods, rather than because of any addition it makes to our knowledge of American wage statistics. The wages are tabulated throughout on the percentile system, and the results are given in medians and quartiles, while the arithmetical average is never used. It is very interesting to learn how admirably clear is the view thus presented of wage groups, and how facile is the comparison between two groups. It is to be hoped that this method will be widely followed. As used in the present instance it is, however, open to two objections, first, that the scattered statements cannot be combined; secondly, that it is not easy to compare this report with any other. There is no simple means of uniting two such statements, as the median wage of 3,000 cotton workers is between \$7.00 and \$7.50, and of 3,500 woollen workers is between \$7.50 and \$8.00, into a single statement representing the groups together, and in the 1,300 large quarto pages before us the 32 occupation groups are left entirely uncombined. Without considerable labour it is impossible to tell from the report anything about the average or median of the wages of the whole industrial population dealt with, or to find what change has taken place between 1890 and 1900, the two years considered. It is, however, not the least merit of the median and quartiles that their calculation is rapid, and it was thought that it might be interesting to make some rather rough approximations to these quantities for the whole group, so repairing the omission of the editors of the report. This is done in the tables given below.

The report is the result of a special inquiry conducted to supplement the imperfect wage statistics obtained in the general

census, with the specific intention of comparing wages in 1890 with those in 1900. For this purpose statistics were taken from those firms only who were carrying on the same kind of business in both years on nearly the same lines. "Effort was made . . . . . to select establishments which may be regarded in every respect as representative. It was determined to secure returns from establishments having the largest numbers of employees." 720 pay-rolls were utilised of firms in 32 manufacturing industries, employing in 1900 about 125,000 workmen. This method is certainly unlikely to give results representative even of American manufacturing industry, still less of industry as a whole. Agriculture, building, and mining, to mention only three groups, are not represented. In four industries less than 1,000 workpeople are dealt with. The largest firms are not necessarily the representative ones. Those who have not changed their methods are among the less progressive. The exclusion of all who have not carried on business for as long as twelve years entails the omission of many important industries. It is perhaps for this reason that the increase of wages is nil in these ten years, while the Board of Trade Fiscal Blue Books (Cd-1761, p. 276) estimates it as between 4 and 5 per cent.

Some test of the accuracy of the American methods of collecting wage statistics may be made by comparing the figures here given for 1890 with those in the Aldrich Report on Wholesale Prices, Wages, and Transportation (see *Economic Journal*, 1895, pp. 369 *seq.*, and *Elements of Statistics*, pp. 87—92). We have, unfortunately, no ready means of comparing the groups in detail; for, on the one hand, it is difficult to separate men, women, lads, and girls, and on the other, different industries are dealt with; but the following table shows the comparison so far as it can readily be made:—



*Comparison of the Aldrich Report, 1891, and the Statistics for 1890 in the Twelfth Census.*

	1891. Average Rate per Day.		1890. Average Rate per Week.*	Quotients. Weekly ÷ Daily Rates.
Cotton.....	\$ 1.24	Men .....	\$ 8.06	\$
		Women.....	5.62	
		All .....	6.33	5.1
Wool .....	1.38	Men .....	9.87	
		Women.....	6.28	
		All .....	7.21	5.2
Metals .....	2.04	Foundries.....	11.25	
		Iron and steel mills	12.20	
		Together.....	11.62	5.7
All occupations in- cluded. Median }	1.50	Men .....	Medians. 10.63	
		Women (about) ...	5.50	
		All .....	9.50	6.3
Quartiles.....	1.15, 2.13	Quartiles .....	8.08, 13.87	7.0, 6.5

\* The arithmetic averages are not given in the Report, but have been estimated from the percentile data.

In the case of metals the agreement is satisfactory ; in the others the discrepancy is as much as 10 per cent. [Wages in 1891 and 1890 were very nearly the same.] The numbers here included from the Aldrich Report are only about 10,000, but they were drawn from a wide range of industries and occupations, and may be expected to make nearly as good a sample as the new group. The conclusion seems to be that neither report can be regarded, without further evidence, as being really representative of wages in general.

The following table shows the grouping of the wage-rates, and the changes between 1890 and 1900 :—

*Rates per Week. Males over 16 Years.*

Workers in	Year.	Percentage of Employees Earning			
		Not More than \$6.00.	\$6.00 to \$6.50.	\$6.50 to \$7.00.	\$7.00 to \$7.50.
Textiles .....	1890	Per cent. 20.8	Per cent. 10.6	Per cent. 5.7	Per cent. 7.3
	1900	18.9	6.8	7.9	8.5

Textiles include carpets, cotton, wool, knitting, dyeing, and finishing.

## Rates per Week. Males over 16 Years—Contd.

Workers in	Year.	Percentage of Employees Earning														Above \$14.50.
		Not More than \$7.50.	\$7.50 to \$8.00.	\$8.00 to \$8.50.	\$8.50 to \$9.00.	\$9.00 to \$9.50.	\$9.50 to \$10.00.	\$10.00 to \$10.50.	\$10.50 to \$11.00.	\$11.00 to \$11.50.	\$11.50 to \$12.00.	\$12.00 to \$12.50.	\$12.50 to \$13.00.	\$13.00 to \$13.50.	\$13.50 to \$14.00.	
Textiles .....	1890	Per cent. 44.4	Per cent. 9.4	Per cent. 5.4	Per cent. 1.7	Per cent. 8.7	Per cent. 2.6	Per cent. 2.5	Per cent. 3.3	Per cent. 2.9	Per cent. 0.5	Per cent. 5.7	Per cent. 1.9	Per cent. 0.7	Per cent. 1.7	Per cent. 8.6
	1900	42.1	9.2	5.6	3.3	7.8	2.8	2.9	3.3	2.0	1.8	5.5	1.8	1.1	1.7	8.0
Wood .....	1890	Per cent. 19.1	Per cent. 6.3	Per cent. 10.4	Per cent. 1.7	Per cent. 11.3	Per cent. 2.8	Per cent. 4.8	Per cent. 4.9	Per cent. 2.6	Per cent. 1.9	Per cent. 8.0	Per cent. 1.6	Per cent. 1.9	Per cent. 4.0	Per cent. 18.6
	1900	13.6	5.4	5.3	2.6	17.3	5.4	3.6	6.4	3.0	2.8	8.3	2.2	2.5	4.1	17.4
Metals .....	1890	Per cent. 16.1	Per cent. 5.6	Per cent. 5.8	Per cent. 2.1	Per cent. 8.1	Per cent. 3.5	Per cent. 3.5	Per cent. 8.5	Per cent. 2.1	Per cent. 1.9	Per cent. 6.1	Per cent. 1.4	Per cent. 2.4	Per cent. 4.5	Per cent. 28.3
	1900	13.0	6.4	5.8	2.8	9.0	3.9	2.9	7.3	2.9	1.0	6.9	3.9	2.6	4.3	27.2
Miscellaneous materials....	1890	Per cent. 14.9	Per cent. 3.8	Per cent. 4.7	Per cent. 1.6	Per cent. 9.7	Per cent. 1.8	Per cent. 3.8	Per cent. 16.8	Per cent. 2.4	Per cent. 1.6	Per cent. 7.9	Per cent. 1.8	Per cent. 1.5	Per cent. 3.7	Per cent. 23.8
	1900	15.3	4.3	5.3	2.2	9.3	6.2	4.0	11.6	2.7	1.0	8.5	0.9	2.2	3.0	23.4
All .....	1890	Per cent. 18.6	Per cent. 5.5	Per cent. 5.9	Per cent. 1.8	Per cent. 9.0	Per cent. 2.8	Per cent. 3.6	Per cent. 10.3	Per cent. 2.3	Per cent. 1.7	Per cent. 6.9	Per cent. 1.6	Per cent. 1.9	Per cent. 4.0	Per cent. 24.0
	1900	15.9	5.9	5.6	2.5	10.2	5.3	3.3	8.0	2.8	1.8	6.9	2.7	2.5	3.1	22.7

Textiles include carpets, cotton, wool, knitting, dyeing, and finishing.

Wood includes agricultural implements, furniture, lumber, pianos, and waggon.

Metals include railroad shops, foundries, iron and steel mills, and ship yards.

Miscellaneous includes bakeries, breweries, candy, chemicals, cigars, clothing, collars and cuffs, distilleries, flour, glass, paper, potteries, printing, rubber, shoes, slaughtering, tanneries, and tobacco.

## Rates per Week. Males over 16 Years—Contd.

Year.	Textiles.			Wood.			Metals.		
	Median.	Quartiles.		Median.	Quartiles.		Median.	Quartiles.	
	\$	\$	\$	\$	\$	\$	\$	\$	\$
1890....	7·8	6·2	10·55	9·7	8·0	12·8	10·8	8·3	14·7
1900....	7·9	6·4	10·70	10·1	8·6	12·3	10·8	8·4	14·4

Year.	Miscellaneous.			All.		
	Median.	Quartiles.		Median.	Quartiles.	
	\$	\$	\$	\$	\$	\$
1890 ..	10·8	9·0	13·8	10·63	8·08	13·87
1900 ...	10·7	8·5	13·8	10·57	8·28	13·69

See notes to preceding table.

It is remarkable how very little change has taken place. For the whole group the median<sup>2</sup> has changed less than 1 per cent. The lower quartile has, however, risen perceptibly, and the upper quartile has fallen; the rates of wage were confined within slightly narrower limits in 1900 than in 1890. The only industries where any significant change is shown are the following:—

Increases—Piano manufacture, bakeries, breweries, collars and cuffs.

Decreases—Furniture, railroad shops, clothing, printing.

As an experiment in the use of averages, the medians of the 32 trades were set down to the nearest half-dollar, they were weighted with the numbers in the trades, and the arithmetic average of the result taken. The averages so obtained were \$10·65 and \$10·58, as against \$10·63 and \$10·57, the actual medians (by interpolation) of the whole group of trades. This suggests that under some circumstances it is justifiable to combine groups represented by their medians, in the same way as when they are represented by their arithmetic averages. If this method could be shown to be generally true, one of the objections to the exclusive use of the percentile method would be removed.

Our Board of Trade statistics (*loc. cit.*) show increases of wages in United States of America in the metal trades of 2 per cent., and in the cotton trades of 15 per cent. between 1890 and 1900. There is no possibility of reconciling the second of these statements with the present report. Though we are not justified in saying that wages in general have been stationary for the ten years 1890-1900 on the imperfect statistics of this report, we can at least say that

<sup>2</sup> The medians and quartiles have been found by ordinary methods of tabulation and interpolation: the report only gives them for separate industries, and as lying within certain half-dollar limits.

in this very considerable group of establishments there has been no important change. It is remarkable that this striking fact is not brought out in the summary tables there given. The work in fact is imposing rather than sound; the new methods are good, but not well handled in the summaries; and the advantages of the old methods, at any rate as used in the United Kingdom, are lost. We have in true American fashion 1,300 pages crammed with detail, which may or may not be important for special purposes, which is neither criticised, tabulated, or summarised.

It may be interesting to compare the statistics shown with the results of our wage census of 1886 :—

*Weekly Rates for Men.*

	Year.	Percentage of Employees Earning							
		less than \$7.50.	\$7.50 to \$8.50.	\$8.50 to \$9.50.	\$9.50 to \$10.50.	\$10.50 to \$11.50.	\$11.50 to \$12.50.	\$12.50 to \$13.50.	Over \$13.50.
		Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
United States of America }	1890	18.6	11.4	10.8	6.4	12.6	8.6	3.5	28.0

	Year.	Percentage of Employees Earning				
		less than 20s.	20s. to 25s.	25s. to 30s.	30s. to 35s.	Above 35s.
		Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
United Kingdom..... }	1886	23.9	33.6	24.2	11.6	6.7

The great number of highly-paid men and the wide range of wages are noticeable in the United States of America group. It is to be remembered that wages in the United Kingdom have increased 20 to 25 per cent. since 1886, while those in the United States of America have hardly changed since 1890. A.L.B.

*Report of the Inter-Departmental Committee on Physical Deterioration.* Vol. i. Report and Appendix. [Cd-2175.] 1904. 1s. 2d.

The original terms of reference to this committee, appointed in September of 1903, ran :—"To make a preliminary inquiry into the allegations concerning the deterioration of certain classes of the population, as shown by the large percentage of rejections for physical causes of recruits for the Army and by other evidence, especially the Report of the Royal Commission on Physical Training (Scotland), and to consider in what manner the medical profession can best be consulted on the subject with a view to the appointment of a Royal Commission, and the terms of reference to such a Commission if appointed."

The preliminary investigation showed, however, that there were no satisfactory comparative data that could be laid before a Royal

Commission, and the terms were accordingly altered to include only more definite questions permitting of direct answers:—“(1) To determine, with the aid of such counsel as the medical profession are able to give, the steps that should be taken to furnish the Government and the nation at large with periodical data for an accurate comparative estimate of the health and physique of the people; (2) to indicate generally the causes of such physical deterioration as does exist in certain classes; and (3) to point out the means by which it can be most effectually diminished.” These are the questions which receive very thorough treatment in an exceedingly interesting report.

This is divided into three parts, the first dealing with the provision of data, the second with the causes and means of diminishing such deterioration as exists, the third summarising the recommendations. In Part I the existing statistics are first rapidly reviewed. The utter uselessness of the recruiting statistics is shown; they seem, in fact, to suffer from almost every possible statistical defect. They do not really give the proportions of recruits rejected owing to physical unfitness, but only the percentage rejected by medical officers after an unknown percentage has been already rejected by the recruiters: the practice of rejection does not appear to have been constant, *e.g.*, with regard to teeth (*cf.* Sir William Taylor's report in the appendix, p. 97, and report, section 22, p. 5), and, finally, the recruits are drawn from varying social strata according to the state of the labour market (Professor Cunningham, § 14, p. 4). The British Association Committee of 1878-83 collected a mass of useful data, but there are practically no earlier or later data with which they can be compared. All small collections of data are difficult to use for comparative purposes, owing to the very considerable differences between one class of the population and another regarding such measurements as stature, and the lack of guarantee that measurements taken at two different epochs refer to the same classes. The only noteworthy statistics that we are a little surprised not to find mentioned in the report are those given by Professor Pearson and Miss A. Lee in *Biometrika* (November, 1903). They are perhaps worth quoting here. The figures are based on data specially collected for the study of heredity, measurements being made on parents and their offspring (over 18 years of age) for more than 1,000 families. The data refer chiefly to the middle classes. Measurements are in inches, and the results are as follows:—

*Males.*

	Mean Stature.	Mean Span.	Mean Forearm.
First generation.....	67·68	68·67	18·31
Second „ .....	68·65	69·94	18·52
Increase of second generation on first generation ... }	0·97	1·27	0·21

*Females.*

	Mean Stature.	Mean Span.	Mean Forearm.
First generation .....	62.48	61.80	16.51
Second „ .....	63.87	63.40	16.75
Increase of second generation on first generation.... }	1.39	1.60	0.24

Professor Pearson discusses these marked changes at some length, but concludes that “however we judge the matter . . . . . there seems no reason to suppose that the population, so far as the middle classes are concerned, is degenerating,” and regards the figures as “hopeful, not as regards the quantity of which it takes no account, but as regards the quality of the offspring of a fair sample of the English middle classes.” The similar but more limited data for stature, collected at an earlier date by Mr. Galton, and referring rather to the upper middle classes, give a difference of the same sign, but much smaller, the means for the first generation being larger than those found by Professor Pearson (Professor Pearson’s reductions, *Philosophical Transactions*, A, vol. 187 (1896), p. 253):—

*Stature.*

Husbands .....	69.14	Wives .....	63.87
Sons.....	69.25	Daughters.....	64.12
Difference .....	0.11	Difference .....	0.25

The differences in the two sets of data emphasise the difficulties of comparison, but strengthen the conclusion of the Committee (§ 68, p. 13), “that the impressions gathered from the great majority of the witnesses examined do not support the belief that there is any general progressive physical deterioration.” In order to provide definite data for the future, the Committee recommend the establishment of an Anthropometric Survey, more or less on lines suggested by Professor D. J. Cunningham and Mr. John Gray (§§ 46—61, 189—90, 423 (1) and Appendix II, p. 102); the survey to be “organised somewhat upon the same plan as the Geological Survey Office,” with a Director and Deputy-Director, one of whom “should be an anthropologist, acquainted with the anatomy and development of the human body, and with experience in anthropometrical work; the other should be a statistician, trained in modern scientific methods.” The Committee consider that the “main attack should be on the youth of the country;” but, were the survey established, considerable numbers of adults might also be dealt with, *e.g.*, those in the service of corporate bodies, the Civil Service, &c. The scheme is of such interest, both practical and scientific, that it is greatly to be hoped it may be realised. The recommendation of the Committee is, it may be noted,

exceedingly strong: "the Committee are *emphatic* in recommending the creation of an organisation on the lines indicated, and regard it of the *highest importance* towards the collection of authoritative information on the subject of the present inquiry, that the survey should be undertaken *at the earliest possible moment*" (§ 54) (my italics).

With a further view to the provision of definite data, the Committee recommend the establishment of a register of sickness (§§ 62, 63, 423 (2)) in connection with the official returns of Poor Law Medical Officers, and with the co-operation of the hospitals, &c. Finally, in order to "receive and apply" the information provided by the Survey and the Register, there should be an Advisory Council, "modelled to some extent on *Le Comité Consultatif d'hygiène publique de France*" (sections 64—6, 423 (3)).

Passing now to Part II of the Report (p. 13), concerning "the causes of such physical deterioration" (i.e., unfitness without respect to past times) "as does exist, and the means by which it can be diminished," we have an exceedingly wide field for discussion. Every factor that may affect the development of man—and what part of his environment can one exclude?—is a possible cause of the deterioration or improvement of the race through the individual, and, in addition, the character of the race as a whole may be altered by the varying fertility of different stocks. The latter question would best have been treated separately, but is interpolated as noticed below in Section V of the present part.

After some introductory remarks (I, p. 13), the urbanisation of the people (II, p. 16) is dealt with at some length under the subsidiary headings overcrowding, pollution of atmosphere, conditions of employment. It is recommended that local sanitary authorities be required to furnish special returns showing *e.g.*, the infantile death-rate, the number of cellar and back-to-back houses, particulars of water supply, sewerage, refuse disposal, &c. (§§ 121—3, 423 (11)). Section III deals with alcoholism, and IV with the rural exodus. We then come to a single page "on the alleged tendency of superior stocks in all classes towards a diminished rate of reproduction." Professor Pearson's very pessimistic peroration to the Huxley lecture for 1903 is quoted, and a somewhat curt comment from Professor Cunningham's evidence, dismissing Professor Pearson's conclusion that "we are ceasing as a nation to breed intelligence as we did fifty to a hundred years ago" as a "pure assumption." The Committee conclude that here again there is no definite evidence, and that it might be well if "steps were taken to obtain, by means of a proper census, accurate information on the point:" i.e., as to the size of families in different classes. The results of such a census would be of high interest, but it would be no easy matter so to organise the investigation as to give definite conclusions; it would have to cover the "manual labour" as well as the "intellectual" classes to give data for comparison; it would have to include the marriage-rates in the two classes, on which their reproduction-rates are equally dependent, and—as with the whole question of alleged deterioration—any one set of observations would be of small

value unless or until there were others at different epochs for comparison. Would not results of almost equal interest be obtainable by extracting birth, death, and marriage-rates for small areas of divergent characters (as suggested later by the Committee in the case of infantile mortality) for a few years at two distant epochs, say 1871 and 1901? The cost would be relatively very small, and the results would throw a good deal of light on the reproduction-rates of different social strata.<sup>3</sup> As bearing on this question, the reader may be reminded that the work of Westergaard and Rubin, which has been discussed by Pearson, shows that in Denmark (1) the gross size of family is much larger for the lower classes than for the upper, but (2) the nett size of family is very little different for the two, owing to the greater death-rate in the lower classes; but again, (3) the class-reproduction-production-rate is greater for the lower strata than the upper, as the marriage-rate is higher, though to an uncertain extent (50 per cent. in the estimate). (Cf. Westergaard and Rubin, *Statistik der Ehen . . . . . in Dänemark*, Fischer, Jena, 1890; Pearson's *Chances of Death, and other Essays*, vol. i, essay 3). Again, Kiaer shows that the percentage of childless marriages is much greater for the official class than for the working class in Norway (9 per cent. and 2 per cent. roughly), and Fahlbeck indicates a progressive decrease in size of family for the Swedish nobility (Kiaer, *Stat. Beiträge zur Beleuchtung d. ehelichen Fruchtbarkeit*, Christiania, 1903; Fahlbeck, *Der Adel Schwedens und Finlands*, Fischer, Jena, 1903). The suspicion suggests itself that the upper classes (without respect to intellectuality) do not, as a rule, reproduce so fast as the lower in civilised States, the social movement of individual lines within the nation being preponderantly upwards. May not this be as well as it is? If there were under-production of offspring amongst the manual-labour classes, and over-production among the upper classes, a downward circulation, which could hardly tend to happiness, would be an economic necessity.

Returning to the Report, after this digression, and passing over the next section on food, we come to Section VII, "on conditions affecting the life of the juvenile population," dealing, *inter alia*, with infantile mortality, the employment of mothers, and defective feeding. Two suggestions of great interest to the statistician are made here; (1) that infant mortality rates should be worked out for particular small areas in industrial towns, and for special industries; and (2) that still-births should be registered (sections 241, 242, and (23), (24), p. 88). The latter is a point in which English registration practice lags behind that of most civilised countries. The question of the employment of mothers produced some interesting evidence (pp. 47—50), and later sections may be noted dealing with the medical inspection (p. 59) and proposed provision of meals for school

<sup>3</sup> The difficulty in urban—more particularly metropolitan—districts lies in the hospitals; e.g., nearly 40 per cent. of the deaths registered, in Hampstead, were hospital deaths. A table has been given, during the last few years only, in the Annual Summaries of the Weekly Returns, showing the death-rates after the distribution of hospital deaths.



children (pp. 65—72). The final section (Section VIII) of Part II is devoted to "special subjects," syphilis, insanity, eyes and ears, teeth.

The recommendations (Part III, pp. 84—92) number fifty-three. We have noticed, briefly, in the above those of most statistical interest; for the remainder, dealing with matters as diverse as local and central sanitary administration, education, the employment of women, milk supply, and the prevention of juvenile smoking, the reader must be referred to the Report. Of the Appendices included in the same volume as the Report three deserve special mention, a critique by Mr. Loch of Mr. Booth's and Mr. Rowntree's estimates of the numbers of the very poor, a memorandum of Miss Anderson's on the employment of mothers, and a statement prepared under the direction of Dr. Tatham on infantile mortality (the deaths arranged under causes, in urban and rural districts and amongst legitimate and illegitimate children).

The general tenor of the Report is reassuring: "The Committee hope that the facts and opinions they have collected will have some effect in allaying the apprehensions of those who . . . have made up their minds that progressive deterioration is to be found among the people generally." They consider that "the law may with advantage be altered and elaborated in certain respects," but significantly add that "complacent optimism and administrative indifference must be attacked and overcome, and a large-hearted sentiment of public interest take the place of timorous counsels and sectional prejudice."

G.U.Y.

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 Rekruten von Appenzell a. Rh. 1883-1902: *P. Wiessmann*.  
 Die badischer Landwirtschaft und Landwirtschaftspolitik in  
 der Gegenwart: *G. H. Schmidt*.



## SWITZERLAND—Contd.

*Journal de Statistique Suisse*, 1904—Contd.

*Lief. 5*—Die Hausindustrie in der schweizerischen Seidenstoffweberei: *Josephine van Anrooy*. Die sozialwirtschaftlichen Verhältnisse für die Ziegenhaltung in der Schweiz: *F. Anderegg*. Exposé préliminaire de l'examen sanitaire des enfants arrivés, en 1901 et 1902, à l'âge de scolarité. Legitimation des enfants naturels en Suisse en 1902. La population de la Suisse d'après l'origine pendant 1850-1900, accroissement ou décroissement.

*Lief. 6*—Entwicklung des Hagelversicherungswesens in der Schweiz und den Nachbarländern: *Hans Gervais*. Die eidg. Fabrikinspektion im 1890-1901: *A. Weidmann*. Die Sträflingswelt des Kantons Baselstadt in statistischer Beleuchtung: *G. Beck*. Contribution à l'étude de la mortalité en Suisse: *Henry Ladame*. Zur Frage der Pensionierung der eidg. Beamten: *J. H. Graf*.

## IX.—Quarterly List of Additions to the Library.

*Additions to the Library during the Quarter ended 15th September, 1904, arranged alphabetically under the following heads:—(a) Foreign Countries; (b) India and Colonial Possessions; (c) United Kingdom and its Divisions; (d) Authors, &c.; (e) Societies, &c. (British); (f) Periodicals, &c. (British).*

The Society has received, during the past quarter, the current numbers—either quarterly, monthly, or weekly—of the periodical official publications dealing with the following subjects:—

**Consular Reports**—From United States and United Kingdom.

**Labour Reports, &c.**—From Austria-Hungary, Belgium, France, Germany, Italy, United States, New York State, Canada, New Zealand, and United Kingdom.

**Trade Returns**—From Argentina, Austria-Hungary, Belgium, Bulgaria, China, Egypt, France, Germany, Greece, Italy, Mexico, Netherlands, Russia, Spain, Sweden, Switzerland, United States, India, Canada, and United Kingdom.

**Vital Statistics**—From Argentina, Egypt, Germany, Italy, Netherlands, Roumania, Switzerland, United States (Connecticut and Michigan only), Queensland, South Australia, and United Kingdom.

**Vital Statistics of following Towns**—Buenos Ayres, Buda-Pesth, Brunn, Prague, Brussels, Copenhagen, Berlin, Bucharest, Moscow, Madrid, London, Manchester, Dublin, Edinburgh, and Aberdeen.

The Society has received during the past quarter the current numbers of the following unofficial Periodicals and Publications of Societies, &c., which are arranged under the Countries in which they are issued :—

**Denmark**—Nationalökonomisk Tidsskrift.

**France**—Annales des Sciences Politiques. Économiste Français. Journal des Économistes. Monde Économique. Polybiblion, Parties Littéraire et Technique. Réforme Sociale. Le Rentier. Revue d'Économie Politique. Revue de Statistique. Journal de la Société de Statistique de Paris.

**Germany**—Allgemeines Statistisches Archiv. Archiv für Sozialwissenschaft und Sozialpolitik. Deutsche Oekonomist. Jahrbuch für Gesetzgebung, Verwaltung, und Volkswirtschaft. Jahrbücher für Nationalökonomie und Statistik. Zeitschrift für die gesamte Staatswissenschaft. Zeitschrift für die gesamte Versicherungs-Wissenschaft. Zeitschrift für Sozialwissenschaft. Mittheilungen aus der Handelskammer Frankfurt a. M.

**Italy**—L'Economista. Giornale degli Economisti. Rivista Italiana di Sociologia. Riforma Sociale.

**Sweden**—Ekonomisk Tidsskrift.

**Switzerland**—Journal de Statistique suisse.

**United States**—American Journal of Sociology. Banker's Magazine. Bradstreet's. Commercial and Financial Chronicle, with supplements. Engineering and Mining Journal. Journal of Political Economy. Political Science Quarterly. Quarterly Journal of Economics. Yale Review. American Academy of Political and Social Science, Annals. American Economic Association, Publications. American Geographical Society, Bulletin. American Statistical Association, Quarterly Publications. American Philosophical Society, Proceedings and Transactions. Columbia University, Studies in History, &c.

**India**—Indian Engineering. Asiatic Society of Bengal, Journal and Proceedings.

**Canada**—The Chronicle: Insurance and Finance.

**New Zealand**—Government Insurance Recorder. Trade Review and Price Current.

**United Kingdom**—The Accountant. Accountants' Magazine. Athenæum. Automobile Club Journal. Australian Trading World. Bankers' Magazine. Broomhalls' Corn Trade News. Browne's Export List. Colliery Guardian. Commercial World. Economic Journal. Economic Review. Economist. Fireman. Incorporated Accountants' Journal. Insurance Record. Investors' Monthly Manual. Investors' Review. Joint Stock Companies' Journal. Labour Co-partnership. Licensing World. Local Government Journal. Machinery Market. Nature. Navy League, Journal. Policyholder. Post Magazine. Produce Markets' Review. Public Health. Publishers' Circular. Sanitary Record. Shipping World. South American Review. Statist. The Times. Tuberculosis. West Africa. Anthropological Institute, Journal. Cobden Club, Leaflets. East India Association, Journal. Howard Association, Leaflets, &c. Institute of Actuaries, Journal. Institute of Bankers, Journal. Institution of Civil Engineers, Minutes of Proceedings. Iron and Steel Institute, Journal. Lloyd's Register of British and Foreign Shipping, Statistical Tables. London Chamber of Commerce, Journal. London University Gazette. Manchester Literary and Philosophical Society, Memoirs and Proceedings. Royal Agricultural Society, Journal. Royal Asiatic Society, Journal. Royal Colonial Institute, Proceedings and Journal. Royal Geographical Society, Geographical Journal. Royal Irish Academy, Proceedings and Transactions. Royal Meteorological Society, Meteorological Record and Quarterly Journal. Royal Society, Proceedings. Royal United Service Institution, Journal. Sanitary Institute, Journal. Society of Arts, Journal. Statistical and Social Inquiry Society of Ireland, Journal. Surveyors' Institution, Professional Notes and Transactions. Trade Circulars.

## (a) Foreign Countries.

**Argentine Republic—**

- |  |                                    |
|--|------------------------------------|
| Anuario de la Direccion General de Estadistica. Año 1903. Vol. 1, 8vo. 1904 .....  | The Director-General of Statistics |
| [Contains the detailed Trade Returns of Argentina for 1903.]   |                                    |
| Agriculture. Ministry of. Section of Statistics and Rural Economy. 79 pp. Maps, &c., 8vo. 1904 ...   | M. Emilio Lahitte                  |
| [Area and produce of crops. Cost of threshing crops. Wages of agricultural labourers and prices of grain. Imports of breeding stock. Railway freights. Rural property. Sales and mortgages, prices of land.] |                                    |
| Agricultura. Ministerio de. Boletin mensual de Estadistica y Comercio. (Current numbers) .....   | The Ministry of Agriculture        |
| Buenos Ayres (Province). Direccion General de Estadistica. Boletin mensual. (Current numbers) }  | The Provincial Statistical Bureau  |

**Austria-Hungary—**

- |  |   |
|--|---|
| Ackerbau-Ministeriums. Statistisches Jahrbuch des k.k. für 1901. Heft 2, Der Bergwerksbetrieb Österreichs im Jahre 1901. Lieferung 4. Die Löhne der Arbeiter und Aufseher beim Bergbau. 8vo. 1904 .....  | The Ministry of Agriculture                     |
| Ackerbau-Ministeriums. Statistisches Jahrbuch des k.k. für 1902. Heft 2, Der Bergwerksbetrieb Österreichs im Jahre 1902. Lieferung 3. 8vo. 1904...   |   |
| Ackerbau-Ministeriums. Statistisches Jahrbuch des k.k., für 1903. Heft 1, Statistik der Ernte des Jahres 1903. Heft 2, Lief. 1, Bergwerksproduktion in 1903. 8vo. 1904 .....   |   |
| Arbeiterverhältnisse im Ostrau-Karwiner Steinkohlenreviere. Teil 1, Arbeitszeit, Arbeitsleistungen, Lohn- und Einkommensverhältnisse. Diagramm, 4to. 1904 .....  | The Austrian Labour Department                  |
| Berufstatistik nach der Volkszählung 31 Dec., 1900. Hefte 6, 7, 9, 10. Fol. 1904 .....   | The Central Statistical Commission              |
| Eisenbahnministerium. k.k. Bericht über die Ergebnisse der Staatseisenbahn-Verwaltung für 1903. Diagrams, &c. 4to. 1904 .....  | The Ministry of Railways                        |
| Handel. Statistik des Auswärtigen Handels des Österreichisch-Ungarischen Zollgebiets im Jahre 1903. 1 Band. (1 Abteilung) Hauptergebnisse. Hafenverkehr. (2 Abteilung) Gesamt-Ein- und Ausfuhr. Verkehr mit den einzelnen Staaten und Gebieten. 2 vols., 8vo. 1904 ..... | The Statistical Department Ministry of Commerce |
| Handelsbewegung, sowie Bewertung der im Jahre 1903, ein- und ausgeführten Waren. Berichte über die. 8vo. 1904 .....  |   |
| Österreichisches Wirtschaftspolitisches Archiv. (vormals "Austria"). (Current numbers.) 8vo. ....  | The Central Statistical Commission              |
| Rechtspflege. Statistik der, für 1900 und 1901. Heft 1, Zivilrechtspflege. Fol. 1904 .....   |   |
| Statistische Monatschrift. (Current numbers) .....   |   |
| Statistische Nachrichten aus dem Gesamtgebiete der Landwirtschaft. (Current numbers) .....   |   |
| Tabellen zur Währungs-Statistik. Zweite Ausgabe. Theil 2, Heft 3, Abschnitt 13. Daten zur Zahlungsbilanz. Heft 4. Abschnitt 14. Preise, Löhne, Kaufkraft des Geldes. 2 parts, fol. 1904 .....  | The Ministry of Finance                         |
| Tabellen zur Währungs-Statistik. Dritte Ausgabe. Heft 4. Abschnitt 7. Aus der Statistik der Zettelbanken. Staatliche Notenausgabe. Staats-Kassascheine. Fol. 1904 .....  |   |

## (a) Foreign Countries—Contd.

**Austria-Hungary—Contd.**

- Unterrichtsanstalten. Statistik der, für 1900-1901. Fol. 1904 ..... } The Central Statistical Commission
- Volkzählung, 31 Dec., 1900. Ergebnisse der, Heft 1, Erweiterte Wohnungsaufnahme. Heft 3, Aufnahme der Häuser in den Gemeinden der Erweiterten Wohnungsaufnahme. Fol. 1904 ..... }
- Hungary.* Denombrement général de la population des pay de la Couronne Hongroise en 1900. 2<sup>e</sup> Partie. Profession de la Population par communes. La. 8vo. 1904 ..... } The Central Statistical Bureau
- Bosnia and Herzegovina.* Hauptergebnisse des Auswärtigen Warenverkehrs in Jahre 1903. 8vo. 1904 ..... } The Statistical Bureau
- Budapest—**
- Monatshefte des Budapester Communal-Statistischen Bureaus. (Current numbers) ..... }
- Statistisches Jahrbuch der Haupt- und Residenzstadt Budapest. IV. Jahrgang 1899-1901. 8vo. 1904 ..... }
- Sterblichkeit der Haupt- und Residenzstadt Budapest in 1896-1903 und deren Ursachen. 8vo. 1904 ..... } The Municipal Statistical Bureau
- Sterblichkeit in 1901-1905 und deren Ursachen. 2<sup>er</sup> (Tabellarischer) Theil, 2<sup>e</sup> Heft, 1902. 8vo. 1904 ..... }
- Volkzählung und Volksbeschreibung. Die Hauptstadt Budapest im Jahre 1901. Resultate der. Band 1, Hälfte 2. La 8vo. 1904 ..... }

**Belgium—**

- Bulletin du Service de Santé et de l'Hygiène publique. (Current numbers) ..... } The Belgian Legation
- Commission Centrale de Statistique. Bulletin de la : Tome xviii. Années 1897 à 1901. 4to. 1904 ..... } The Central Statistical Commission
- [Movement of Population in 1900, by Births, Deaths and Migration. Proceedings of the Commission.]
- Annuaire de la Législation du Travail. 7<sup>e</sup> Année. 1903. 8vo. 1904 ..... }
- Industries à domicile en Belgique. Vol. 6 (Vêtements pour hommes, Cordonnerie, Tissage de la laine et du coton). Plates, 8vo. 1904 ..... } The Belgian Labour Department
- Mines. Annales des. (Current numbers) ..... }
- Académie Royale de Belgique. Bulletin de la classe des lettres. . . 1904. (Current numbers) ..... } The Academy

**China—**

- Customs Gazette. (Current numbers) ..... } Sir Robert Hart, Bart., G.C.M.G.

**Cuba—**

- Comercio Exterior. Oct.—Dec. y año 1903. 1 vol. Diagrams, 4to. 1904 ..... }
- Riqueza Pecuaría. Consumo e Ymportacion de Ganado. 1900 à 1903. 4to. 1904 ..... }
- "The Republic of Cuba." A brief sketch compiled for distribution at the Louisiana Purchase Exposition, St. Louis. Spanish and English Edition. 158 pp., sm. 8vo. 1904 ..... } The National Library of Cuba

## (a) Foreign Countries—Contd.

**Denmark—**Communications Statistiques. 4<sup>e</sup> Serie. Tome 14.

8vo. 1904

[Imports and Exports in 3rd quarter of 1903, and in year 1903. Population of Iceland and of Greenland, 1901. Prices of grain in 1903. Agricultural holdings, size, and nature of, 1901.]

The Statistical Bureau

Communications Statistiques. 4<sup>e</sup> Serie. Tome 15.

8vo. 1904

[Prices of grain in Denmark, 1600—1902. Poor Relief in 1901, causes of poverty of those relieved, classed under 13 heads.]

Copenhagen. Tabelvaerk til Kjobenhavns Statistik.

No. 14. Beskrivelse af Kjobenhavns Kommunes

Ejendomme. No. 15. Tabellariisk fremstilling af

Erhvervs, Fodesteds- og Indvandringsforholdene

... Maps, 4to. 1904

The Municipal Statistical Bureau

**Egypt—**

Comité de Conservation des Monuments de l'Art

Arabe. Exercice 1902. Fasc. 19. Procès-verbaux

des Seances, &amp;c. Pistes, 8vo. 1904

The Committee

Dette Publique. Compte rendu des travaux de la

Commission de la Dette publique d'Égypte pendant

1903. 8vo. 1904

The Caisse de la Dette Publique

Irrigation. Despatch enclosing Report by Sir W.

Garstin upon the Basin of the Upper Nile, &amp;c.

Plans and plates. [Cd. 2165.] 1904

[Description of the Lake area, estimates of cost of proposed Irrigation schemes, &amp;c.]

Purchased

Postes égyptiennes. Administration des. Rapport sur

l'Exercice 1903. 8vo. 1904

[Shows an increase of business in all departments of the Post Office. The number of articles posted in 1883 was 9 million odd; in 1893, 19 million odd; in 1903, 40 million odd. Of the depositors in P.O. Savings Banks, 20 per cent. are Government employees.]

The Post Office

**France—**

Agriculture. Ministère de l'. Bulletin mensuel de

l'Office de Renseignements agricoles. (Current

numbers.) 8vo.

The Ministry of Agriculture

Assistance. Statistique annuelle des Institutions d'.

Année 1902. 8vo. 1904

[Gives the returns for France and for each Department, of Poor relief, Medical Relief at home and at hospital, Lunatic asylums, Hospitals, Pawn-broking, Losses from fires, hail, contagious disease among horses and live stock.]

The French Labour Department

Chemins de fer français. Statistique des, au 31

Décembre, 1902. Documents principaux. 4to.

1904

The Ministry of Public Works

Finances, Ministère des. Bulletin de Statistique et de

Législation comparée. (Current monthly numbers)

The Ministry of Finance

Société d'Economie Politique. Le Centenaire de

Cobden. 35 pp, 8vo. 1904

The Society

**Germany—**

Atlas und Statistik der Arbeiterversicherung des

Deutschen Reichs. Beiheft zum Reichs-Arbeits-

blatt. Juni, 1904. Diagrams, fol. Berlin, 1904

Purchased

Gesundheitsamtes. Veröffentlichungen des Kaiser-

lichen. (Current numbers)

The Imperial Health Bureau

## (a) Foreign Countries—Contd.

## Germany—Contd.

- Ergebnisse des Impfgeschäfts für 1901. La. 8vo. 1904 ..... }
- Ergebnisse der amtlichen Pockentodesfallstatistik vom Jahre 1902, nebst Unhang, betreffend die Pockenerkrankungen im Jahre 1902. La. 8vo. 1904 ..... } The Imperial Health Bureau
- Ergebnisse der Todesursachenstatistik während 1901. La. 8vo. 1904 ..... }
- Tätigkeit der errichteten staatlichen Anstalten zur Gewinnung von Tierlymphe während 1903. La. 8vo. 1904 ..... }
- Handel. Auswärtiger, des deutschen Zollgebeits im Jahre 1903. Teil 1, 17 Hefte. 4to. 1904 ..... }
- Kriminalstatistik für das Jahr 1901. Maps, 4to. 1904 ..... } The Imperial Statistical Bureau
- Statistisches Jahrbuch für das Deutsche Reich. 25 Jahrgang 1904. Maps, &c. 1904 ..... }
- Vierteljahrshefte zur Statistik des Deutschen Reichs. Jahrgang 1904. Heft 2. 4to. .... }
- Prussia. Zeitschrift des K. Preussischen Statistischen Bureaus. (Current numbers)..... } The Royal Prussian Statistical Bureau
- Saxony—
- Graphische Darstellungen von Progressionen der Gemeindecinkommensteuern in 135 Gemeinden ... Diagrams, 4to. 1904 ..... } The Statistical Bureau of Saxony
- Zeitschrift des K. Sächsischen Statistischen Bureaus. (Current numbers)..... }
- Frankfort. Handelskammer zu Frankfurt-am-Main. Jahres-Bericht für 1903. Theil 2. 8vo. .... } The Chamber of Commerce
- Hamburg. Hamburgs Handel und Schifffahrt, 1903. 4to. 1904 ..... } The Bureau of Trade Statistics

## Greece—

- Commerce de la Grèce avec les Pays étrangers pendant 1902. 4to. 1904 ..... } The Bureau of Statistics

## Italy—

- Annali di Agricoltura, 1904. No. 230, L'assicurazione mutua contro i danni della Mortalita nel Bestiame. No. 231, Atti del Consiglio Ippico, 1900-04. 2 vols., 8vo. 1904 ..... } The Director-General of Agriculture
- Bollettino del Ministero degli Affari Esteri. (Current numbers.) 8vo. 1904 ..... }
- Bollettino di Statistica e di Legislazione comparata. (Current numbers) 8vo. 1904 ..... } The Director-General of Statistics
- Censimento della Popolazione, 10 Feb., 1901. Vol. iv. 8vo. 1904 ..... }
- [Occupations by age and sex. Religions.]
- Lavoro. Bollettino dell' Ufficio del lavoro. Vol. i. Nos. 1—3, April—June, 1904. 8vo. 1904 ..... } Purchased
- Societa Umanitaria. Pubblicazioni... No. 5. Lavoratori delle Risaie... Parte 2. No. 7. Scioperi, serrate, e vertenze fra capitale e lavoro in Milano nel 1903. 2 vols., 4to. 1904 ..... } The Society

## Japan—

- Fourth Financial and Economical Annual of Japan, 1904. Map, 8vo. Tokyo, 1904 ..... } The Consulate General of Japan

## (a) Foreign Countries—Contd.

**Mexico—**

- |   |                        |
|---|------------------------|
| Boletín de Estadística fiscal. (Current monthly numbers.) Fol. ....                                 | The Statistical Bureau |
| Censo y División Territorial del Estado de San Luis Potosí verificados en 1900. La. 8vo. 1904 ..... |                        |
| División Territorial de la República Mexicana. Estados del Centro. La. 8vo. 1904 .....              |                        |
| Estadística fiscal. Datos relativos. (Current numbers)  |                        |

**Netherlands—**

- |  |                                |
|--|--------------------------------|
| Jaarcijfers voor het Koninkrijk der Nederlanden. Koloniën, 1902. 8vo. 1904 .....   | The Central Statistical Bureau |
| Education. Statistiek van het Betrekkelijk Schoolverzuim in 1902 en van het Volstrekt Leerverzuim op 15, Januari 1903. 4to. 1904 ..... |                                |
| Electoral. Statistiek der periodieke verkiezingen voor de Provinciale Staten, gehouden in 1904. 8vo. 1904 .....                        |                                |
| Justice. Justitiële Statistiek, over het jaar 1903. 4to. 1904 .....  |                                |
| Labour. Statistique du jugement des contraventions de la loi sur le travail des ouvriers en 1903. 28 pp. 8vo. 1904 .....               | The Ministry of Finance        |
| Trade. In-, Uit-, en Doorvoer over het Jaar 1903. Statistiek van den, Gedeelte 1. Fol. 1904 .....                                      |                                |
| Vital Statistics. Statistiek van de Sterfte naar den Leeftijd en naar de oorzaken van den Dood over het jaar 1903. 4to. 1904 .....     | The Central Statistical Bureau |
| Revue du Bureau Central de Statistique. 8 <sup>e</sup> alevierung (8 <sup>me</sup> Livraison). 8vo. 1904 .....                         |                                |
| [Labour Statistics: Wages, Hours of Labour, Labour Disputes, Home Industries, Labour Exchanges.]                                       |                                |

**Norway—**

- |  |                                |
|--|--------------------------------|
| <i>Norges Officielle Statistik.</i> 8vo. 1904—   |                                |
| Assistance publique. Statistique pour 1900. (80)   | The Central Statistical Bureau |
| Écoles professionnelles, 1899-1902. (85) .....   |                                |
| Instruction publique. Statistique pour 1900. (84)  |                                |
| Kriminelle Retspleie. Tabeller, 1899 et 1900. (81)   |                                |
| Navigation. Statistique pour 1902 et 1903. (87)  |                                |
| Prisons. Annuaire de l'administration générale des, 1901-02. No. 1. Notices historiques sur les prisons pendant 1814-1900. Diagrams. (86) ...  |                                |
| Recensement 3 Dec., 1900. No. 3. Maisons habitées et menages. No. 4. Population classée par nationalité, lieu de naissance, et culte. Aveugles, sourds-muets, et aliénés. (82 et 83) ..... |                                |
| Successions, faillites, et biens pupillaires en 1901. (88) .....   |                                |
| Journal du Bureau Central de Statistique. (Current numbers.) 8vo. ....   |                                |
| Flottage sur les fleuves et les lacs de la Norvège de 1896 à 1900. 52 pp., 8vo. 1904 .....   |                                |
| Recensement de la Population de la Chine. Formulaires et Instructions. 6 pp., 8vo. 1904 .....  | The Municipal Health Office    |
| <i>Christiania.</i> Beretning fra Kristiania sundhedskommission for 1903. Diagram, 8vo. 1904 .....   |                                |

**Paraguay—**

- |   |                         |
|---|-------------------------|
| Assumption. Memoria del Directorio de la Camara de Comercio de Asuncion . . . año 1903. 8vo. Asuncion, 1904 ..... | The Chamber of Commerce |
|---|-------------------------|

(a) Foreign Countries—*Contd.***Roumania—**

Commerce extérieur et Navigation de la Roumanie pendant les trois premiers mois de 1904. 8vo. 1904	The Statistical Bureau
Mouvement de la Population de la Roumanie en 1903. Données Provisoires. Fol. 1904	

**Russia—**

Agriculture. Year-Book of Department of, 1903. Part 6, and 1904, Part 1. (In Russian.) 2 vols., 8vo. 1904	The Department of Agriculture
Récolte en Russie en 1903. Résultats Généraux de la. Maps, 4to. 1904	
Trade Returns for 1902. (In Russian.) 4to. 1904	The Department of Customs
Prices of Grain at Ports. Returns of (in Russian). Sheets. (Current numbers)	The Ministry of Finance
Diagram-maps showing Prices of Rye and Oats in European Russia on 1st of month. (Current numbers)	
Moscow. Bulletin statistique mensuel de la ville de Moscou. (Current numbers.) 8vo.	The Municipal Statistical Bureau

**Salvador—**

Boletín del Consejo Superior de Salubridad. Año 3, Nos. 1 & 2. 1904. 8vo. 1904	The Health Department
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**Spain—**

Estadística del Impuesto de Transportes por Mar y a la entrada y salida por las fronteras. 2° Trimestre de 1904. No. 17. 8vo. 1904	The Director-General of Customs
Barcelona. Boletín Municipal de Barcelona. Año 1904. Jan.—March. Fol. 1904	

**Sweden—**

Arbetsstatistik, 4. Undersökning af den Mekaniska Verktädsindustrien i Sverige. 8vo. 1904	The University of Upsala
Arbetsstatistik. Meddelanden från K. Kommerskollegii afdelning för, No. 2, 8vo. 1904	
Bidrag till Sveriges Officiella Statistik. 4to. 1904—	The Central Statistical Bureau
A. Befolkningsstatistik, 1901. (Population)	
D. Fabriker och Handverk, 1902. (Factories) [In 1902 there were nearly 11,000 factories, employing 263,000 workers. The total value of their production is estimated at over £58,000,000.]	
K. Hälso- och Sjukvården, 1902. (Lunacy)	
N. Jordbruk och Boskapsskötsel, 1902. (Agriculture) [Gives the crops and number of live stock in 1902. Oats and rye are the principal grain crops. Wages of agricultural labourers are also given.]	
Q. Statens Domäner, 1902. (Forests)	
Rikets In- och Utförel. (Current numbers)	
Sammandrag af de enskilda sedelutgifvande bankernas. (Current numbers)	
Sammandrag af Riksbankens Ställning. (Current numbers)	
Statistisk Tidskrift. (Current numbers)	
Uppgift & Folkmängden inom hvarje Kommun, Härad, Lingslag, Domsaga, Stad och Län, den 31 Dec., 1903. Fol. 1904	



## (a) Foreign Countries—Contd.

## United States—

*Agriculture. Department of. Bulletins, &c.—*

47. The Hog Industry. Parts 1, 2, 3. Selection, Feeding, and Management. Recent American Experimental Work. Statistics of Production and Trade. 298 pp. 8vo. 1904 .....

54. Laws. (Federal, State, and Territorial) relating to Contagious and Infectious Diseases of Animals. 1902 and 1903. 8vo. 1904 .....

55. Statistics of the Dairy. Compiled from the United States Census for 1900, and from other Reliable Sources. With Explanatory Notes. Diagrams, maps, &c. 8vo. 1903 .....

Crop Reporter. (Current numbers) .....

*Census Bureau. Bulletins—*

8. Negroes in the United States. Maps, 4to. 1904. [Their distribution, increase, sex, age, birthplace, illiteracy, conjugal condition, occupations, death-rates. The negro farmer, as owner and tenant.] .....

11. Municipal Electric Fire Alarm and Police Patrol Systems. 4to. 1904 .....

Census 1900. Special Reports. Occupations at the 12th Census. Diagrams, &c., 4to. 1904 .....

Debt. Monthly Statements of the Public, and of Cash in Treasury. (Current numbers.) Sheets ....

Gold, Silver, and Notes, &c., in Circulation. Monthly Statements. (Current numbers.) Sheets .....

Commerce and Finance. Monthly Summary. (Current numbers) .....

Foreign Commerce and Navigation of United States for year ending 30th June, 1903. Vol. 2. Imports and Domestic Exports of Merchandise by Articles and Countries, 1893-1903. 4to. 1904 .....

[The Imports from United Kingdom in 1903 were 190 million dollars, compared with 166 million dollars in 1902 and 143 million dollars in 1901. The Exports of domestic merchandise to United Kingdom in 1903 were 524 million dollars, compared with 548 million dollars in 1902, and 531 million dollars in 1901.]

*Industrial Commission. Vols. 8vo. 1901—*

10. Report on Agriculture and Agricultural Labor, including testimony, with review and topical digest thereof .....

11. Report on Agriculture and on Taxation in Various States (second vol. on Agriculture), including Special Reports on Fictitious Sales of Farm Products, the Tobacco Trade, American Farm Labor, Laws regarding Agricultural Boards. Warehouse and Elevator Laws, Adulteration of food products and Taxation Systems .....

12. Report on Relations and Conditions of Capital and Labor employed in the Mining Industry, including Testimony, Review of Evidence, and Topical Digest .....

13. Report on Trusts and Industrial Combinations (second volume on this subject), including testimony taken since 1st March, 1900, together with Review and Digest thereof, and special Reports on Prices and on the Stocks of Industrial Corporations. Diagrams .....

14. Report on the Relations and Conditions of Capital and Labor employed in Manufactures and General Business (second volume on this subject), including testimony taken after 1st November, 1900, with review and digest thereof, and a special report on Domestic Service. Diagrams ....

The Department

The Bureau

The Census Bureau

The Secretary of the Treasury

The Bureau of Statistics, Department of Commerce and Labor

The Hon. Theodore E. Burton

## (a) Foreign Countries—Contd.

## United States—Contd.

## Industrial Commission. Vols. 8vo. 1901—Contd.

- 15, Reports on Immigration, including Testimony, with Review and Digest, and special Reports; and on Education, including Testimony, with Review and Digest. Diagrams.....
- 16, Report on Condition of Foreign Legislation upon Matters affecting General Labor.....
- 17, Reports on Labor Organizations, Labor Disputes, and Arbitration; and on Railway Labor....
- 18, Report on Industrial Combinations in Europe....
- 19, Final Report, prepared in Accordance with an Act of Congress approved 18th June, 1898 .....
- The Hon. Theodore E. Burton
- Interstate Commerce Commission. Seventeenth Annual Report. 15th December, 1903. 8vo. 1903
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[1903 was exceptionally healthy, the death-rate, 17·2 (it was 26·8 in 1874), being the lowest on record, and many preventable diseases were correspondingly low. The weather conditions of 1903 were largely the cause of the healthiness of the year.]

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[The death-rate, 15·0 is the lowest on record, the birth-rate, 21·0, which is the same as the former year, is also the lowest on record].

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**1904.**

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**JOURNAL**  
**OF THE ROYAL STATISTICAL SOCIETY.**

.DECEMBER, 1904.

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PRESIDENTIAL ADDRESS *of* SIR FRANCIS SHARP POWELL, BART.,  
M.P., *Delivered to the* ROYAL STATISTICAL SOCIETY, 15th  
November, 1904.

I DESIRE in the first instance to give expression to my high appreciation of the honour conferred upon me by my appointment to the office of your President in succession to those distinguished men who have held that trust in preceding years.

In accordance with custom I note the death during the year of Fellows whose labours have left their mark on our history, and must therefore record the death of the Marquis of Salisbury and Sir F. Bramwell. This is not the time to pronounce an eulogy, but the mention of such names proves the width of our field and the complexity of the interests affected by the discussions and by the action of our Society. Among Honorary Fellows duly elected during the year are I. de Vargha (Austria-Hungary), Director of the Central Statistical Bureau of Hungary, Buda-Pesth; Emile Waxweiler, Professor of Economics and Finance at the University of Brussels; Dr. W. Lexis, Professor of Economics at the University of Göttingen, Vice-President of the International Statistical Institute; Fedele Lampertico, Senator, Member of the Academy Dei Lincei, Vicenza; and C. A. Verriijn Stuart, Director of the Central Statistical Bureau of the Netherlands.

I have pleasure in stating that Mr. Brabrook, one of our Vice-Presidents, held the office of President of Section F of the British Association in 1903. We are now able to congratulate the "Meat and Milk" Committee on the conclusion of their protracted inquiry and on the final report presented on their behalf in June by Mr. R. H. Rew. Mention must also be made of the encouraging reply of the President of the Local Government Board to the influential deputation which waited upon him in support of a

quinquennial census, a reform which in principle, though not in detail, is supported by the recommendation of the Committee on Physical Deterioration, that periodical weighing and measuring of children take place in our schools. An Organising Committee is now making every preparation for the meeting of the International Statistical Institute next year. Our able Secretary, Dr. Ginsburg, has retired after six years of excellent service, of which the Council have recorded their fullest recognition, and his place has been filled by Mr. J. A. Cable.

I must now proceed to deal with the question which forms the subject of my address. The address ought to bear on subjects most before the mind of the country. Questions relating to fiscal inquiries have a prominent place; but this controversy, long academic, has for the moment unfortunately assumed almost a party character, and is therefore less suited than it would be under ordinary circumstances for the present occasion.

There is, however, one subject which ought to have no party association, and will, we would hope, ere long be dissociated from party. I refer to Education.

The latest contributions made by the Society to our knowledge, were the papers relating to popular education in England and Wales which were read by Mr. Rowland Hamilton in the years 1883 and 1890. This precious record of valuable information is at our command, and will remain a landmark of no ordinary importance. Perhaps more than any other documents these papers afford instructive evidence of our progress. Although comparatively recent, they describe in sharp outlines conditions now belonging to the history of the past. They speak for example of "passes"; these are no more, except for labour certificates. They speak of the Department of Science and Art; this administration and department, now much changed, plays a subordinate but justly influential office at the Board of Education.

In my statement I shall endeavour rather to make use of statistics already published than to increase a store which is overwhelming in magnitude and significance. It is, however, necessary to present some impressive figures, and others which illustrate educational conditions in the most advanced countries. Elementary education may be thought to occupy an undue share of attention, but difficulties of definition, to say nothing of the range of the subject, forbid entrance upon many attractive branches of our great subject. I have felt it my duty as President to make no reference at this moment to the discussions on religious instruction which now occupy so much time elsewhere. But I must take leave to express the opinion that in all education Christianity supplies the best



motive force, and that all educational schemes must fail which do not recognise the value of religious influences.

In dealing with the United Kingdom we must not forget that the figures are in our libraries, or may easily be brought there. It must therefore suffice to state that—

- (A.) The population of the United Kingdom was in 1901 41,609,320.
- (B.) The population of England and Wales was 32,527,843.
- (C.) The expenditure of the Board of Education in England and Wales was, during the financial year 1903-04, 11,254,737*l.*, whereof about 10 millions were devoted to elementary education. It appears impossible to ascertain the amount derived from the rates in the same period.
- (D.) At the end of the year 1902-03 the number of scholars on the register was 5,975,127, in average attendance was 5,047,129.
- (E.) The teaching staff at the same date was—
  - (1.) Certificated teachers, 70,886.
  - (2.) Adults, including all recognised teachers except pupil teachers, 126,977.
- (F.) The proportion of scholars to—
  - (1.) Certificated teachers was 71·20.
  - (2.) Adult teachers was 39·75.
- (G.) Adult women teachers, including all recognised teachers except pupil teachers, were 95,158.
- (H.) The number of authorities has been reduced to 321 under the Act of 1902.
- (I.) The Act has now come into operation in the area of every local authority throughout England and Wales.

The grants of charters to the Universities of Manchester, Liverpool, and Leeds must be recorded even in this brief summary. But as regards secondary, including technical, education, the organisation is so incomplete and the subject of so many changes, that reliable description is impracticable. Greater activity is everywhere to be noted, and the growing desire to promote education will accomplish great reforms in these schools. Meanwhile we observe with satisfaction the increasing conviction among competent judges that in many instances too exclusive attention has been paid to purely technical instruction, and that a wider culture and a more truly liberal education should be the groundwork of instruction among those who hereafter will be called upon to fulfil the varied duties of our citizens. Whatever be the controversies now existing, there can be no doubt that the establishment of the Board of Education and the consolidation of local authorities

with a view to their co-ordination and co-operation are amendments of the greatest importance, and must necessarily have the most powerful influence on the progress of our national education.

In reference to Scotland, the first thought is the regret that the services of Sir Henry Craik are now near their end, and that his name will no longer appear as Secretary.

The population of Scotland in 1901 was 4,472,103.

The expenditure from the parliamentary grant to day schools under inspection was, 1902-03, 766,541*l*.

The amount raised from the education rate was then 1,139,416*l*.

The number of scholars in the year ended August, 1903, was—

(A.) On registers ... 785,473 | (B.) Average attendance.... 669,289

The number of certificated teachers was 12,195.

The number of assistant teachers was 2,555.

The number of pupil teachers was 4,165.

There has been a steady growth in the higher grade schools or departments, and the like prosperity has attended continuation schools. As regards Scotland as well as England schools of the higher class are not fully dealt with in this enumeration, a defect necessarily arising from the imperfect character of our information. Scotland is doubtless in advance of England as regards Leaving certificates, and in other respects, but still requires legislation to amend and extend the Act which was passed in 1872.

The population of Ireland in 1901 was 5,458,775.

The number in the National Schools according to the latest available returns of "the Commissioners of National Education for Ireland" has been stated, 1902, at 487,098, and the number of students who gave notice of their intention to be present for examination by the Irish Intermediate Education Board in 1903 at 8,554. As regards university education, exclusive of Trinity College, I have only to recall the words of Mr. Gladstone in 1873, when he described university education in arts as "bad, scandalously bad," and to ask any person who has read the report of the late University Commission whether any less severe term can with justice be applied to the Royal Irish University as it exists at the present time. Fortunately for myself, I am not under the necessity of discussing the melancholy history of the Queen's Colleges.

We now cross the Atlantic Ocean and visit the United States, largely under the guidance of the United States Commissioners of Education. In the States, according to the report printed in the year 1903—

The estimated total population in 1902 was 78,544,816.

I may remark that "School age" or "school population" has a meaning which is new to us, and includes young persons from 5 to 18 years of age, numbering 22,261,863.

The number enrolled (duplicates excluded) was 15,925,867.

The number in average attendance was 10,999,273.

The teachers were—

(A.) Women..... 317,104 | (B.) Men ..... 122,392

making a total of 439,596, of whom 27·8 per cent. were men.

The salaries average among men was nearly \$50 a month.

The salaries average among women was nearly \$40 a month.

As regards illiteracy there are unable to read and write of:—

	Per Cent.
Native born of native parents, white .....	5'9
"          foreign          " .....	2'0
Foreign born, white .....	11'5
Negro .....	47'4

This disheartening figure as regards negro illiteracy is still further illustrated by those relating to the South Atlantic and South Central groups of States, where the figures of negro illiteracy are 51·1 and 52·5 respectively, and prove that the negro problem is yet unsolved, although there has doubtless been a gratifying decrease of negro illiteracy.

If all schools and colleges, public and private, are included, we have in 1901-02, according to the American Commission, 17,460,000 scholars, and by further including those in what are termed "special schools," 628,840, we reach the high figure of 18,080,840. The reports are hopeful throughout, and speak of progress in every department.

Two uncertainties, at least, render it difficult to deal with United States figures on education—one the mode of calculating an average, a difficulty which we have endeavoured to remove by legislation as regards elementary schools in 1900; the other the meaning of the word "day." Unequal length of days must produce unequal results. This source of misapprehension is referred to in the report of the United States Commission (p. lxxvii), where they say that "there are a few States that do not ascertain at all how long the schools are taught, and others that use methods so faulty that they are totally in the dark in the matter."

In the United States, it may with advantage be remarked, the principle of direct local control is by no means universally applied, but, on the contrary, much power of nomination to public bodies is entrusted to those holding office. The large and growing preponderance of female teachers in the United States of America

cannot pass without observation. Necessity rather than choice appears to have caused this disproportion, and it is worthy of note that the members of the Mosely Commission express much doubt as to the effect of this system upon American character, and warn their readers that something of true manliness will be lost if boys are left to be educated mainly by the opposite sex. The American Commissioners of Education (p. x) report, in 1902, that "this preponderance of women teachers is due largely to the fact that three-fourths of all the pupils are in the first year's work of the elementary schools, and to the fact that women are now preferred over men for instructors to children under 10 years of age." The end of the discussion concerning the preponderant employment of women as teachers has not yet been reached. It may not be premature to remind those who desire the maintenance of efficiency in our schools that, in the long run, and with teachers as they are found in fact, as distinguished from the theories of educational philosophers, some difficulties may arise from the comparative deficiency in the powers of endurance during long continuous service among women, and from the wastage arising from a desire to enter upon the duties of family life, which does not unfavourably affect the scholastic career of men.

I would fain dwell on the Great Dominion of Canada, with the many difficulties of religion and race, including a complex constitutional problem in Manitoba, which have been surmounted so far at least that all work heartily together in the common cause. But space prevents adequate treatment, and inadequate treatment is insistent with what is due to our Great Dominion. It would appear from a reliable authority that the population is 5,371,315, the number of teachers 28,609, and of scholars 1,008,632. To these figures some addition must be made for attendances at the universities and college. Some of these are already worthy of Canada, and will become the parents of even more powerful seats of learning as population expands and opportunities multiply.

Mention must needs be made of the Swiss Republic, in view of the powerful and progressive activities which have so long commanded admiration. Unlike many other countries, Switzerland has an educational history. But the description, always difficult, is impossible in a short paper, because each canton has within the widest limits its own educational laws; a statement, therefore, respecting one canton does not accurately describe the whole of Switzerland as regards either regulation or financial arrangements. Forgetfulness of this consideration has led to much misconception, and to statements respecting Swiss education which convey a most inaccurate impression as to the real state of affairs.



The number of teachers was, for—

(A.) Écoles maternelles .... 9,754 | (B.) Écoles élémentaires 154,760

The cost of primary instruction is reported to have been—

	France.		France.
1870 .....	61,640,893		1901..... 227,465,290

Algeria being included in the latter case.

The cost of Lycées is reported to be, including all charges—

	France.		France.
Boys .....	34,886,193		Girls ..... 3,146,002

And there are also large grants described under the head of "Bourses encouragements aux collèges de garçons" and "cours secondaires de filles" amounting to upwards of  $4\frac{1}{2}$  million francs.

But these figures are not to be regarded as describing the same services as corresponding figures would indicate in our own case.

As reference has been made in public discussion to our recruits, some interest attaches to the degree of instruction in the French army.

The whole number finally placed on the list for ballot was, 1900 .....	}	309,332	
Those able to read or write only are given at		35,183 or 11.79 per cent.	
Those who had a more advanced primary education .....	}	235,364	„ 78.85 „
Those who had received the "brevet de l'enseignement primaire" .....	}	4,844	„ 1.02 „
There were "Bacheliers" of sundry kinds		6,443	„ 2.16 „

I may also draw attention to the physical development of the recruits, but it must suffice in this place to state that the average height of those who were admitted to the list for ballot (1900) was 1.649 metre.

Recent proceedings with regard to the congregations and other causes of a kindred kind render these and like statistics incomplete and unsatisfactory, but do not deprive them of real value. Further details respecting France are beyond the limits at command. The universities would appear from M. Levasseur to have 27,995 students, while other institutions claiming to give the same education have some 2,000 pupils. The progress in France may not, and probably does not, surpass or even equal that of Germany or of own country; but there is evidence that the quick intellect of our French neighbours will not be permitted to remain without the advantage of culture under circumstances best suited to the conditions of the French Republic.

In Germany, like Switzerland, as all men know, but few remember, each political division has large independent authority

in education. The system of Prussia, for example, differs widely from that of Wurtemberg, Baden or Bavaria.

In the year 1896, a date so recent that no changes of moment can have since occurred, the population of Prussia was somewhat more than 1 million greater than that of England and Wales. There are, however, numerous differences in the bases of calculation when we deal with education; but there remain many facts, or approximations to facts, even where it is difficult to introduce desirable qualifications. The two countries may therefore be compared with advantage.

The average expenditure per child on the register (exclusive of central and local administration, but inclusive of buildings) was—

	£	s.	d.		£	s.	d.
In Prussia .....	1	15	6	In England .....	2	12	9

Or excluding buildings—

	£	s.	d.		£	s.	d.
In Prussia .....	1	10	8	In England .....	1	17	-

The Prussian limits of age are between 6 to 14, but our age includes that of infants, and we have a much smaller proportion of children in the later years of school life.

After making the necessary allowances, the children on the books of public elementary schools in 1896 were—

In Prussia.....	5,236,826		In England.....	5,422,989
-----------------	-----------	--	-----------------	-----------

but it must be noted that under the more severe administration which prevails in Prussia, the Prussian attendance corresponded more closely than ours to the numbers on the register.

The number of scholars per teacher was then—

In Prussia .....	66		In England.....	57
------------------	----	--	-----------------	----

excluding pupil teachers.

In Prussia there were few women; only 10,271 out of 78,959, or 18 per cent. of the whole, whereas with us out of 94,943 teachers there were 68,396, or 72 per cent., including those familiarly known as "articles 68." Almost the whole of the Prussian teachers have "certificates of capacity," and the great majority have gone through a training college course. There is another difference in the fact in many rural schools in Prussia the same teacher ordinarily has two sets of scholars. Pupil teachers, moreover, unknown in Prussia, form an important part of our staff. The most careful estimate proves that we were in 1896 under no disadvantage as regards teaching power. This power has with us been largely augmented since 1896.

"The expense has been recently given in Mr. Haldane's "Education and Empire," and the attitude of the Germans may best be described in the following extract from that volume (p. 27): "The Germans grudge expenditure at least as much as we do, but "this kind of expenditure experience has taught them not to "grudge. Besides the 22 universities with their 2,500 professors "and 22,000 students, and the 10 technical high schools with their "850 professors and 11,000 students, there are 18 other technical "schools of a lower grade, and also a number of commercial high "schools or colleges. Of smaller institutions, there are 259 schools "of agriculture in Prussia alone, attended by 10,000 pupils, and "1,000 other schools where instruction in agriculture is given. "Taking primary, secondary, and tertiary education together, the "expenditure of public money (including rates) on education and "instruction amounts to 25,000,000*l.* annually."

A further illustration of German activity is presented in the Consular Reports of the last few months. They describe among other institutions—

I. Technical schools for special branches of the metal industries.

II. Special technical schools for the wood working industries.

III. The like for—

(A) Mechanical engineers and electro-technics.

(B) Ship engineers.

(C) Textile industry.

(D) Ceramics.

(E) Agricultural instruction, with especial reference to the development thereof.

It is impossible to devote more space to statements chiefly of a statistical character. The figures above submitted have been selected because they illustrate the broadest aspect of the question, and deal with facts which so far as the nature of the case admits, afford bases of comparison between different countries.

I now enter upon considerations which may involve difference of opinion, and may make suggestions for further action with a view to remove or at any rate mitigate evils, the existence of which is universally admitted.

Intimately connected with the progress or otherwise of education is the physical condition of the people. I would venture to remind those whom my words may reach that the Commission on Physical Training in Scotland last year reported that "although "not called upon to arrive at a decision as to whether or not there "exists a progressive deterioration of the slum population of "Great Britain or of the inhabitants of large towns as a whole, it "is enough for them to find (by comparing the statistics of



“Aberdeen and Edinburgh, and quite as much by comparing those of the latter with the poorest schools of Edinburgh itself) evidence that, whatever be the case with the population as a whole, there exists in Scotland an undeniable degeneration of individuals of the classes where food and environment are defective, which calls for attention in obvious ways, one of which is a well-regulated system of physical training.” The Interdepartmental Committee on Physical Deterioration in the United Kingdom (1904) reports (p. 13) “that it may be as well to state at once that the impressions gathered from the great majority of the witnesses examined do not support the belief that there is any general progressive physical degeneration.” Dr. Eichholz, a leading witness, in evidence highly commended by the Commission, states with regard to physical degeneracy, that “the children frequenting the poorer schools of London and the large towns betray a most serious condition of affairs, calling for ameliorative and remedial measures, the most impressive feature being the apathy of parents as regards the school, the lack of parental care of children, the poor physique, power of endurance, and educational attainments of the children attending school.” The witness then proceeds to state that in the poorest districts there are schools above the lowest which show a marked upward and improving tendency physically and educationally, while in the better districts of towns there exist public elementary schools frequented by children not merely equal but often superior in physique and attainments to rural children. He further states, “Except the well-known specifically hereditary diseases which affect poor and well-to-do alike, there appears to be little evidence on the pre-natal side to account for the widespread physical degeneracy amid the poor, while on the other hand there is every reason to anticipate rapid amelioration of physique so soon as improvement occurs in external conditions.” I believe that the above summary presents, in substance and effect, the whole case, and proves that although there is much to cause regret or even a national sense of shame, and to rouse the public to energetic action, there is danger from extravagant statements. Some improvements present little difficulty, and with an active public opinion to support progress reforms will most certainly be effected.

Be it further remembered that Mr. Booth, in dealing with the figures which he has so carefully prepared, which are so instructive, and so rightly an incentive to action, remarks that he throughout leans to the safe side, preferring to paint things too dark rather than too bright, and that Mr. Loch, himself no mean authority, gives reasons worthy of consideration to prove that these figures

cannot be taken without considerable qualification. Warm admiration is felt for the zeal and energy of Mr. Rowntree, but even his statistics may not bear the test of searching examination.

Such is the picture. What are the causes? Some affect education only indirectly as dealing with general conditions injurious to health. Among these are (1) over-crowding, happily now fast diminishing, but still an evil of enormous magnitude in some districts; (2) Pollution of the atmosphere by smoke or other noxious emanations, both owing, not to defective law, but to lax administration, the passive resistance of indolent or partial local authorities; (3) Conditions of employment, often the fault of those who administer the law, or even of the workpeople themselves, rather than of Parliament; (4) Alcoholism; and (5) The migration of the best types to the towns. But the cause which works with most direct and fatal effect on the education of the young is defective feeding in infancy, from neglect by the mother of her duties, afterwards by ignorant, if not guilty, want of care, judgment, and knowledge. How far there has been in recent years a less active sense of parental obligation, how far there is that decay of self-denying painstaking industry which some moralists describe as affecting all classes, how far there is greater ignorance of domestic duties than is found among the like class elsewhere, how far the attractions of life outside the home or the necessity of earning daily bread in the factory has prevailed to the injury of the home, I do not venture to say. I do, however, assert that the best reform is to be found through the parents, whose affections have often been proved by the experience of the Society for the Prevention of Cruelty to Children to be dormant rather than dead. It is among the possibilities of the future that recourse may be had to public agencies within limited areas. But we must remember the terrible danger of pauperisation and loss of independence among the people, and consider with the greatest care whether the details of the necessarily complex organisation would not exceed the opportunities of our local authorities. For the present moment, at any rate, recourse must be had to the more effective exercise of powers already existing, and to those ministrations of a sympathetic and friendly character among the classes affected which are already achieving such admirable results where carried on with patience, energy, and skill.

There are some problems connected with elementary education which cannot be neglected even in this paper. One is the wastage of teachers in England and Wales. It is a difficult problem, among other reasons because we have to deal with those who resume their occupation as well as with those first entering upon professional

duties. Perhaps the most instructive information will be given by comparing the estimated number in public elementary schools in the year ending January :—

*Trained Masters.*

Year ending in January,	Increase of Number Serving.	Output of Trained Masters.	Wastage.	Percentage of Wastage Calculated on Number Serving at the Beginning of the Year.
1897 .....	535	889	354	2·2
'98 .....	357	809	452	2·7
'99 .....	695	839	194	1·2
1900 .....	215	878	663	3·8
'01 .....	483	890	407	2·3
'02 .....	255	952	697	3·8
'03 .....	501	1,010	509	2·7

*Trained Mistresses.*

Year ending in January,	Increase of Number Serving.	Output of Trained Mistresses.	Wastage.	Percentage of Wastage Calculated on Number Serving at the Beginning of the Year.
1897 .....	614	1,249	635	3·8
'98 .....	564	1,263	699	4·1
'99 .....	798	1,308	510	2·8
1900 .....	733	1,440	707	3·8
'01 .....	572	1,488	916	4·7
'02 .....	374	1,664	1,290	6·5
'03 .....	751	1,698	947	4·6

*Untrained Masters.*

Year ending in January,	Increase of Number Serving.	Output, i.e., Number Passed Certificate Examination.	Wastage.	Entered at College.	Percentage of Wastage Calculated on Number Serving at the Beginning of the Year.
1900.....	92	292	170	30	2·4
'01.....	83	291	180	28	2·6
'02.....	193	317	105	19	1·5
'03.....	222	417	164	31	2·2

*Untrained Mistresses.*

Year ending in January,	Increase of Number Serving.	Output, i.e., Number Passed Certificate Examination.	Wastage.	Entered at College.	Percentage of Wastage Calculated on Number Serving at the Beginning of the Year.
1900.....	980	1,981	1,034	17	5.3
'01.....	954	1,989	989	46	4.4
'02.....	845	2,135	1,245	45	5.9
'03.....	1,644	2,779	1,126	9	5.1

In this connection it must be recorded that the output of trained teachers from the training colleges is now about 2,800 annually.

But here follows a financial question: What does this wastage cost? What validity practically attaches to, and what interpretation is given by the teachers to their declaration that they intend *boni fide* to adopt and follow the profession of a teacher in schools named in the declaration, which states: "I acknowledge that in entering this college I take advantage of the public and other charitable funds by which it is supported, for the said profession and for no other purpose." Do the university students, for example, remain in the profession? This question is partly answered by a House of Lords return in 1898 based on seven years' experience, whence it appeared that (1) in day training colleges, all in connection with universities, 23 per cent. of the men and 15 per cent. of the women trained had already left the service; and (2) in residential colleges, about 22 per cent. of the "university" men students and 23 per cent. of the "university" women students had left within that short period, and furthermore there is now (in 1904) reason to fear that the loss is more especially heavy among "university" students who are allowed a third year's training. This difficulty must ere long receive the most anxious consideration, especially having regard to the increase of women teachers, who ordinarily leave the profession on entrance upon the duties of married life.

This wastage of teachers, or the desertion of their profession by teachers trained at public expense for public elementary schools teaching, necessarily involves the loss of their services to education. But it is also a loss to the Exchequer. It has been estimated, on the expectation of twenty years' service (including 58,007*l.* in grants to pupil teachers), as a sacrifice of 323,239*l.* annually, and as a wastage of trained teachers of 2.5 per cent. in men, and 4.2 of women annually. The declaration should be more faithfully observed, especially among those who have a third year's training or become university students, because the intention of Parliament is defeated

if funds provided for the best education of teachers become the means of their withdrawal from the public service.

There is one more question of no ordinary moment to which reference must be made, viz., the diminution of attendance of young children. This may be accidental, or it may be associated with some diminution of our child population, a change which, if continuous, must give rise to grave misgivings, and may have some connection with recent legislation, by by-laws and otherwise, which lengthens the period during which the child is wholly dependent on the parent, and may cause restraints on population to which in this country we are fortunately strangers. The last and recently published report of the census, 1901 (p. 16), states, that in England and Wales the increased percentage of births, which has been 37·89 in 1871-81, 34·24 between 1881-91, further declined to 31·57 during the decennial period 1891-1901. The decrease in the death-rate, it is added, did not counterbalance the decrease in the birth-rate, the natural increase of population having declined from 15·09 in 1871-81, and 13·97 in 1881-91, to 12·39 in 1891-1901.

There is one difficulty in educational discussions which has already been mentioned. I refer to the use of terms. The word "day," as has already been stated, is used in different senses. The length of school hours is unequal, and schools in some instances receive more than one set of scholars in the same day. The phrase "school-age" conveys wholly different meanings in different cases. The phrase "school term" conveys no definite idea whatever. Even the simple phrase "average attendance" in our English system, to say nothing of other systems (even if always meaning the same thing at the same time), is interpreted under the Act of 1900 according to the uncertain and inconstant provisions of the minutes of the Board of Education. The Prussian "teacher" is in the very large majority of cases the result of the same educational process, and is for the most part a man, whereas with us the teachers include a large proportion of women, and represent widely different modes of preparation for their duties.

In dealing with the higher education, this difficulty of definition is insuperable for the present, and will doubtless increase with the multiplication of types caused partly by new wants, partly by educational progress. I would respectfully commend the consideration of this hindrance to the future conference of the International Statistical Institute. Their labours will be of the more value if some approach could be made to a common nomenclature.

There is one remaining impediment which necessarily belongs to the present stage of our history. I speak with diffidence or even

timidity, but must confess to a sense of alarm on reading and sometimes listening to the enormous masses of crude statements made, with the air and sometimes even with the surroundings of authority, by persons who are new not only to educational discussion but to education itself. The existing systems are not wholly wrong, and will never be reformed by indiscriminate censure, or even by the somewhat wearisome repetition as new discoveries of old truths which are not illustrated but concealed by the introduction of new terms, and by the use of a ponderous and sometimes uncouth phraseology.

It now only remains for me to direct your most thoughtful consideration to the impressive significance of these figures, and the wide, the infinitely wide, difference between figures relating to education and ordinary statistics. In them every figure, if accurate, necessarily records a result of the past, and by a moral more or less obvious presents a forecast of the future. But that which is thus recorded is of itself inactive. Accumulated masses of wealth have no vitality, no moving force of their own. In dealing with education we have everywhere a living force possessing independent energy, the product of individual and collective action in the past and the sure cause of the like in the future.

Wise indeed must he be who can foretell the future action of these vast incalculable movements. They will triumph over the resistance of physical opposition. Although they may not transform the world, they will shape the fortunes of those who dwell therein, and govern for evil or for good coming generations of men who in due succession will people the earth.

## APPENDIX.

*Tables to illustrate Progress of Education in England and Wales.*

PUBLIC ELEMENTARY SCHOOLS (OTHER THAN HIGHER ELEMENTARY SCHOOLS).\*

TABLE I.—Schools and Departments.

Year ending 31st August.	Council or Board Schools.	Voluntary Schools.	Total.	Departments.	Accommodation. In thousands.	
					For how many Children.	Percentage to Estimated Population.
1870 .....	—	8,281	8,281	12,061	1,879,	8·50
'72 .....	82	9,772	9,854	14,101	2,296,	9·95
'74 .....	838	11,329	12,167	17,646	2,861,	12·09
'76 .....	1,596	12,677	14,273	20,782	3,426,	14·13
'78 .....	2,682	13,611	16,293	23,618	3,942,	15·86
1880 .....	3,433	14,181	17,614	25,601	4,241,	16·64
'82 .....	3,868	14,421	18,289	26,779	4,538,	17·24
'84 .....	4,181	14,580	18,761	27,958	4,827,	17·79
'86 .....	4,402	14,620	19,022	28,645	5,145,	18·46
'88 .....	4,562	14,659	19,221	29,056	5,357,	18·71
1890 .....	4,676	14,743	19,419	29,339	5,539,	18·84
'91 .....	4,747	14,761	19,508	29,533	5,628,	19·35
'92 .....	4,831	14,684	19,515	29,672	5,693,	19·36
'93 .....	4,904	14,673	19,577	29,804	5,763,	19·38
'94 .....	5,081	14,628	19,709	30,038	5,833,	19·44
'95 .....	5,260	14,479	19,739	30,237	5,937,	19·53
'96 .....	5,432	14,416	19,848	30,521	6,072,	19·71
'97 .....	5,524	14,434	19,958	30,847	6,215,	20·01
'98 .....	5,555	14,382	19,937	30,911	6,317,	20·11
'99 .....	5,632	14,432	20,064	31,178	6,418,	20·21
1900 .....	5,691	14,409	20,100	31,234	6,510,	20·28
'01 .....	5,797	14,319	20,116	31,278	6,610,	20·27
'02 .....	5,878	14,275	20,153	31,372	6,681,	20·25
'03 .....	5,965	14,208	20,173	31,548	6,783,	20·32

\* Compiled from the Reports of the Board of Education.

TABLE II.—*Scholars and Attendance.\**

Year ending 31st August.	Scholars on the Registers on the Last Day of the School Year.			Scholars in Average Attendance.		Percentage of Average Attendance to Numbers on the Registers.
	Total. In thousands.	Percentage to Estimated Population.	Half-Time Scholars (included in previous Columns).	Total. In thousands.	Percentage to Estimated Population.	
1870 .....	1,693,	7.66	—	1,152,	5.21	68.07
'72 .....	1,969,	8.53	—	1,336,	6.08	67.86
'74 .....	2,498,	10.56	—	1,679,	7.09	67.21
'76 .....	2,944,	12.08	201,284	1,985,	8.66	67.42
'78 .....	3,496,	13.96	216,510	2,405,	9.60	68.80
1880 .....	3,896,	15.29	193,953	2,751,	10.69	70.61
'82 .....	4,190,	15.91	177,126	3,015,	11.06	71.97
'84 .....	4,337,	15.99	168,818	3,273,	12.06	75.46
'86 .....	4,506,	16.17	168,548	3,438,	12.49	76.31
'88 .....	4,688,	16.37	168,300	3,615,	12.62	77.12
1890 .....	4,804,	16.34	175,437	3,718,	12.64	77.39
'91 .....	4,825,	16.59	173,040	3,750,	12.89	77.72
'92 .....	5,007,	17.03	172,363	3,871,	13.16	77.31
'93 .....	5,126,	17.24	164,018	4,100,	13.79	79.98
'94 .....	5,199,	17.29	140,831	4,226,	14.06	81.29
'95 .....	5,299,	17.43	126,896	4,325,	14.23	81.61
'96 .....	5,423,	17.60	119,747	4,423,	14.35	81.55
'97 .....	5,507,	17.73	110,654	4,489,	14.45	81.50
'98 .....	5,577,	17.76	103,678	4,554,	14.50	81.66
'99 .....	5,654,	17.81	95,621	4,637,	14.60	82.01
1900 .....	5,686,	17.71	89,036	4,666,	14.53	82.06
'01 .....	5,758,	17.65	74,468	4,732,	14.51	82.48
'02 .....	5,881,	17.82	77,426	4,890,	14.82	83.56
'03 .....	5,975,	17.90	80,758	5,037,	15.09	84.30

\* Compiled from the Reports of the Board of Education.



TABLE III.—Teachers.\*

Year ending 31st August. (31st December for some of the earlier years.)	Men and Boys.				Women and Girls.				Total.		
	Certified and Provisionally Certificated.	Assistant and Provisional Assistant.	Pupil Teachers.	Probationers.	Total.	Certified and Provisionally Certificated.	Assistant and Provisional Assistant.	Pupil Teachers.		Probationers.	Additional.
1870.....	6,396	487	6,384	—	13,266	6,072	775	8,228	—	—	15,075
'72.....	7,355	538	9,381	—	17,274	7,416	1,108	12,357	—	—	20,881
'74.....	9,008	809	10,608	—	20,320	9,706	1,680	16,713	—	—	28,099
'76.....	10,554	1,062	11,102	—	22,718	12,499	1,859	19,436	—	543	34,337
'78.....	12,065	2,086	10,793	—	24,944	15,259	3,680	20,353	—	1,698	37,055
'80.....	13,521	2,681	10,636	—	26,838	17,901	4,971	20,934	—	2,352	40,990
'82.....	14,749	3,339	8,852	131	27,071	20,695	6,782	19,433	183	2,603	42,966
'84.....	15,863	4,717	7,079	628	28,287	23,136	10,430	18,008	1,037	3,656	49,646
'86.....	16,805	5,336	7,512	650	30,303	25,407	12,103	20,292	1,344	4,659	56,267
'88.....	17,334	5,152	8,078	549	31,613	26,731	13,994	21,823	1,269	4,972	63,805
1890.....	18,704	5,254	7,270	425	31,653	27,895	16,530	22,840	1,127	5,210	68,789
'91.....	19,199	5,459	6,360	452	31,470	28,624	18,049	21,771	1,351	5,681	73,042
'92.....	19,591	4,960	5,828	517	30,896	29,181	18,598	21,133	1,570	6,951	75,476
'93.....	19,995	4,991	5,675	574	31,235	29,345	20,132	21,613	1,785	8,584	81,409
'94.....	20,486	4,863	5,922	604	31,875	30,203	21,204	22,817	1,895	10,196	86,315
'95.....	21,223	5,047	6,645	601	33,516	31,718	22,914	24,831	1,926	11,678	93,067
'96.....	22,439	4,108	7,194	543	34,284	34,273	21,285	26,385	1,802	12,838	96,533
'97.....	23,051	3,884	6,874	495	34,304	35,763	21,322	25,724	1,656	14,155	98,620
'98.....	23,439	4,065	6,411	568	34,481	36,435	22,671	24,627	1,804	15,136	100,673
'99.....	24,253	4,725	6,081	562	35,621	37,832	25,508	24,702	2,004	16,717	106,763
1900.....	24,557	5,121	5,614	464	35,756	39,481	27,315	23,779	2,101	17,512	110,188
'01.....	25,124	5,396	5,180	507	36,207	41,025	29,820	22,822	2,474	17,956	113,597
'02.....	25,572	5,360	5,219	414	36,565	42,241	30,905	23,999	2,194	17,588	116,927
'03.....	26,296	5,523	4,689	478	36,986	44,610	32,728	22,743	2,400	17,820	120,301

\* Compiled from the Reports of the Board of Education.

**SCOTLAND. Primary Day Schools: Scholars, Accommodation and Attendance.\***

Years ending 31st August up to 1879, and ending 30th September afterwards.	1 Scholars on Registers. In thousands.	2 Number who can be Accommodated. In thousands.	3 Average Attendance in Aided Day Schools. In thousands.	4 Increase on Previous Year. In thousands.	5 Rate of Increase per Cent.	6 Number of Schools Inspected.
1872.....	—	267,†	214,	—	—	1,962†
'73.....	—	280,†	221,	7,	3·3	2,043†
'74.....	—	392,†	264,	43,	19·6	2,587†
'75.....	—	407,	304,	40,	15·0	2,890
'76.....	—	463,	329,	26,	8·4	2,912
'77.....	—	536,	360,	31,	9·5	2,931
'78.....	—	563,	377,	17,	4·6	2,998
'79.....	—	586,	385,	8,	2·1	3,003
1880.....	—	602,	405,	20,	5·1	3,056
'81.....	—	612,	410,	5,	1·32	3,074
'82.....	556,	619,	421,	11,	2·76	3,073
'83.....	569,	694,	433,	12,	2·82	3,090
'84.....	588,	656,	448,	15,	3·49	3,131
'85.....	592,	660,	471,‡	23,	5·12	3,081
'86.....	615,	691,	484,	13,	2·72	3,092
'87.....	632,	678,§	494,	10,	2·14	3,111
'88.....	642,	687,	502,	8,	1·55	3,105
'89.....	643,	706,	503,	6,	1·27	3,116
1890.....	664,	715,	520,	11,	2·22	3,076
'91.....	678,	733,	540,	20,	3·90	3,105
'92.....	667,	737,	549,	9,	1·71	3,030
'93.....	665,	738,	563,	14,	2·52	3,004
'94.....	686,	770,	578,	15,	2·69	3,054
'95.....	692,	789,	583,	9,	1·64	3,034
'96.....	709,	824,	602,	14,	2·36	3,083
'97.....	717,	844,	611,	10,	1·58	3,086
'98.....	718,	848,	618,	7,	1·16	3,067
'99.....	731,	866,	621,	3,	0·44	3,062
1900.....	753,	894,	629,	8,	1·27	3,104
'01.....	767,	921,	636,	7,	1·10	3,141
'02.....	769,	926,	650,	14,	2·15	3,145
'03.....	785,	948,	669,	19,	2·84	3,149

\* Compiled from the Reports of Scotch Education Department, and from the "Statistical Abstract for United Kingdom."

† Excluding Roman Catholic schools.

‡ The figures for 1885-1900 are those of schools upon the annual grant list.

§ Apparent diminution is caused by change in calculating accommodation.

|| Number in receipt of grants.

Table comparing Scholars and Attendance in London and Bradford.\*

Year.	LONDON.			BRADFORD.			Percentage Average Attendance on Number on Rolls for England and Wales.
	Average Number of Children on Rolls.	Average Attendance for the Year.	Percentage Average Attendance on Average Number on Rolls.	Average Number of Children on Rolls.	Average Attendance for the Year.	Percentage Average Attendance on Average Number on Rolls.	
1874....	99,033	70,853	71·3	6,983	4,068	58·2	67·21
'76...	146,031	114,380	78·3	8,934	5,646	63·1	67·42
'78...	207,289	165,900	80·0	13,438	9,437	70·2	68·80
1880....	250,946	200,694	79·9	16,835	11,836	70·3	70·61
'82....	295,833	238,205	80·5	18,880	14,112	74·7	71·97
'84....	355,228	278,224	78·3	20,392	15,407	75·5	75·46
'86....	384,346	303,715	79·0	22,290	17,120	76·8	76·31
'88....	420,914	328,578	78·0	23,902	18,626	77·9	77·12
1890....	443,143	345,746	78·0	24,895	19,034	76·5	77·39
'91....	460,981	347,857	77·1	25,395	19,981	78·7	77·72
'92....	465,066	362,585	77·9	26,525	20,120	75·9	77·31
'93....	477,689	379,445	79·4	26,743	21,009	78·6	79·98
'94....	488,038	390,812	80·0	27,065	21,491	79·4	81·29
'95....	498,303	400,912	80·4	27,450	22,113	80·6	81·61
'96....	511,566	415,771	81·2	27,264	22,478	82·4	81·55
'97....	520,877	421,960	81·0	27,152	22,887	84·3	81·50
'98....	527,486	429,853	81·4	27,098	22,351	82·5	81·66
'99....	533,855	438,434	82·1	26,939	21,717	80·6	82·01
1900 ..	536,019	439,744	82·0	32,052†	27,035	84·4	82·06
'01....	535,717	446,866	83·4	—	—	—	82·48
'02....	546,370	462,840	84·7	—	—	—	83·56
'03....	549,677	475,150	86·4	—	—	—	84·30

\* Compiled from "Final Report of the School Board for London, 1870-94," and "Bradford School Board Triennial Report, 1897-1900."

† The city was extended in 1899.

PROCEEDINGS *on the* 15TH NOVEMBER, 1904.

AFTER the preliminary formal business of the meeting,

The PRESIDENT said he had first to discharge a very pleasant duty, that of presenting the Guy Medal in silver to Mr. D. A. Thomas, M.P., for his Paper on "The Growth and Direction of our Foreign Trade in Coal during the last Half Century." Mr. Thomas represented a borough largely engaged in the coal industry, and took great interest in this subject. The Society was under a great obligation to Mr. Thomas for his valuable contribution to an important branch of a subject which so seriously affected the well-being of that trade, and therefore of the people of this country.

Mr. THOMAS, M.P., said he desired to thank the Council very sincerely for the honour conferred upon him. He regarded the award of the medal as a very high distinction, and he was free to confess now that the mere possibility of securing it added a considerable stimulus to his endeavours when writing the paper. The coal business was one with which he ought to be familiar, but the dry light that statistics had thrown on the subject during the preparation of the paper had compelled him to abandon many preconceived ideas, and in endeavouring to inform others, he had himself derived much information on a question on which he had previously thought he knew pretty well all there was to be known. Without being egotistical, he might claim that the paper had been written impartially. It dealt incidentally with the question of Free Trade *versus* Protection, which had since become so very controversial. In that room, of course, controversial subjects were tabooed, but he might say that writers on both sides of the fiscal question had very freely made use of the figures he had prepared in support of their opposing contentions.

The PRESIDENT announced that the Council had awarded the Howard Medal to Mr. Leonard Ward, and he heartily congratulated him on the distinction.

The PRESIDENT having delivered his Annual Address,

Major CRAIGIE said in a Society like that, which had now reached the respectable age of 70 years, there were many traditions governing their procedure, and amongst the most agreeable was that which he then obeyed, in rising, as the retiring President, to move a cordial vote of thanks to Sir Francis Powell for the address he had just delivered. The custom was one of very considerable value, for it enabled the officer going out to tender his congratulations to the officer coming in, on whose shoulders the duty of guiding the work of that important Society would for

some time to come rest. There was another tradition, equally good in its origin no doubt, which was always obeyed in that room. Meeting as they did every November, they always excluded from criticism, which was the proper fate of all their papers, the Presidential Address of the year. They welcomed it, noted it, took it away to study, and often proved its value as giving a special note to the deliberations of the coming year, but they did not debate and discuss it as did they an ordinary paper. He was sure, however, they would all agree in tendering their best thanks to the President on this occasion. Sir Francis Powell was a Fellow of the Society, who had stood by it many years, doing good work in many places besides their own meeting room. He need only refer to the part he took last Session in the House of Commons, and in introducing to the President of the Local Government Board a very important Deputation on one of the most practical and important of the Statistical questions of the day, that of securing a quinquennial census of the population of this country. He earned their thanks also in wisely choosing, as he had done for his address, a subject so wide and so important as that of Education. It was a subject which was in more than one sense very much in the air at this moment, and the statistical comparisons he had brought forward were striking, and their study would bear fruit hereafter. The approaching meeting of the International Statistical Institute, to which they were all looking forward next summer, when their Fellows were preparing to welcome their foreign colleagues, would be an opportunity for directing attention to many of those anomalies which still distinguished all international educational comparisons. He was afraid that even some of their own figures with regard to different divisions of the United Kingdom on this question might be included amongst those which must be called "incomparable" (in the bad sense of that word). The absence of agreement was surely a matter which the President of the Society might well commend to the attention of its Fellows, when, as it appeared, they in many instances did not know what was the precise definition either of "a day" or of an "average." Evidently, when matters had come to this pass, the Royal Statistical Society might well direct its energies to this question.

Sir ALFRED E. BATEMAN, K.C.M.G., said he had great pleasure in seconding the vote of thanks. Major Craigie had justly said that discussion of the President's Address was not allowed, but if discussion were allowed, he thought even the most captious would not find much to find fault with, either in the excellent and moderate statements the President had made, or the way in which he had handled this subject. He had been neither an optimist nor a pessimist as regarded education. He had not painted the black too black, nor the white too white. He thought they were much indebted to him for this address, which would be preserved in the annals of the Society as the work of the President. Major Craigie had referred to what had been said about the International

Statistical Institute, and, as a member of the Bureau of that Institute, he would ask that any Fellows who took an interest in education or in international comparison, would think over it and see if they could prepare something by next July which would lead to discussion with their foreign friends as to the use of terms which might enable international comparisons to be made in the statistics not only of elementary education, but also of higher education, in which confusion was even worse confounded than in statistics relating to elementary education. There was no subject of more importance at the present day, and they were glad to recognise that these figures of elementary education which the President had given showed some improvement of late years, still if they went to the manufacturing districts they were often told that the technical education was no use to the great majority of those who left the elementary schools, because they were not properly educated. It therefore became a matter of the greatest importance to improve materially our own system. Having heard the address, he need not say any more, but would simply ask them to give a hearty vote of thanks to Sir Francis Powell for his excellent address.

The PRESIDENT said he desired to thank those who had so kindly proposed the vote of thanks, and also the Fellows who had accepted the invitation. Any word of commendation from those who had spoken, and were so capable of exercising a sound judgment, was to him a high compliment. It had been a great pleasure to prepare the Address, which, though a work of some labour, was well worth the time expended upon it, and therefore a cause of much satisfaction to himself.

The following were elected Fellows of the Society :—

Robert à Ababrelton.  
Richard von Arkovy.  
Thomas Edwin Charles.  
Arthur George Liddon Rogers,  
M.A.

Simon Rosenbaum.  
Hastings B. Lees Smith, M.A.  
John Souter.  
John William Sowrey.  
Correa Moylan Walsh.

*The ACCOUNTS of the COLLEGES of OXFORD, 1893-1903; with  
SPECIAL REFERENCE to their AGRICULTURAL REVENUES.*

*By* L. L. PRICE, M.A.

[Read before the Royal Statistical Society, 20th December, 1904.  
SIR FRANCIS SHARP POWELL, Bart., M.P., President, in the Chair.]

I.—INTRODUCTORY REMARKS.

SOME ten years ago I submitted to the consideration of the Royal Statistical Society a paper on "The Colleges of Oxford and "Agricultural Depression."<sup>1</sup> That paper was based on figures contained in the published accounts of the Oxford Colleges<sup>2</sup> (and of the University) for the years extending from 1883 to 1893 inclusive. With the first of those years the annual publication of these accounts began, and the second was the last completed year for which they had been issued at the time when my paper was written. I propose now to lay before the Society the results of a similar examination made of these published accounts for a subsequent period of like duration.

In some respects accordingly the present paper may be described as a continuation of that read in January, 1895. In the different comparisons of the figures for single years which will be furnished, those relating to the early year, that of 1883, will be placed beside those of the two later years, 1893 and 1903. But the scope of the inquiry may now, I think, appropriately be extended beyond the limits set some ten years ago. A *prima facie* examination of the figures for the later series of years might even suggest to a casual observer that the tide of agricultural depression had turned. But a closer and more prolonged inspection would reveal cogent, if not convincing, reasons for questioning this conclusion; and we should be led to substitute the less cheerful but more accurate conception of a sensible retardation in a continuing movement. A comparison of 1903 with 1883 would supply irresistible reasons for large modification in a judgment based on a contrast between 1903 and

<sup>1</sup> Cf. *Journal of the Royal Statistical Society*, vol. lviii, part 1 (March, 1895), p. 36, &c.

<sup>2</sup> The Colleges included in the volume published annually number nineteen. The accounts of Hertford College are given only for *Internal Receipts and Payments*.

1893 alone. It would bring into prominence the serious loss of revenue, actual or prospective, which the Colleges, and the University, have sustained through the fall in the value of their agricultural property.

Yet the subject of agricultural depression will, for sufficient reasons, be given less exclusive prominence on this occasion; and some attention will be bestowed on other descriptions of revenue, both external and internal, besides that derived by the Colleges from their agricultural property. Some corresponding notice will be taken of items of expenditure which were not considered in the earlier paper. For the purpose of comparison with the results then reached, tables have been prepared on similar lines to those followed before; but these will be supplemented by others containing fresh sets of figures relating to additional classes of receipts and payments. The whole of the revenue and expenditure of the Colleges will, in fact, be brought under investigation, although special prominence will still be assigned to their agricultural income and outgoings. More detailed notice will also now be directed to the financial record of the University as distinct from the Colleges.

But, although the scope of the present paper, compared with that of January, 1895, will be thus enlarged, the caution then entered respecting the conclusions which can safely be drawn from the published accounts needs *a fortiori* repetition at the outset of the more extensive inquiry on which we are entering. Once more, if I may, I should like to quote the language first employed on an occasion even prior to that when I attempted to deal with the Colleges as a whole. Examining then the financial history of a single College, I said<sup>3</sup> that the published accounts "necessarily relate to totals rather than to the items of which those totals are composed, and there is reason for believing that the different colleges follow different methods of classification and arrangement in arriving at the totals presented under the various headings of the published accounts. Although, therefore, the comparison between the accounts of the same college in different years may be made with some confidence, the comparison of the accounts of one college with those of another and the addition of the totals of the various items, as they appear under the same head in the accounts of the different colleges, so as to form a grand total, may be vitiated by a difference in the methods of arriving at these totals which have been adopted by different colleges."

<sup>3</sup> Cf. *Journal of the Royal Statistical Society*, vol. lv, part 1 (March, 1892), p. 4.



I do not think, indeed, that these differences need prevent the attainment of tolerably secure and valuable conclusions, if those conclusions are broad and general in character, and do not pretend to minute precision of detail. The risk of some disturbing change in the classification followed by particular Colleges in the successive years of a series cannot, it is true, be ignored or eliminated; but nevertheless a strong presumption exists that no great departure would willingly or suddenly be made by any one or more of the Colleges from modes of keeping the accounts and presenting the figures, which in a period such as a score or the greater part of a score of years had won the status of a fixed tradition. In any event, a permissible rearrangement of such of the figures as seem obviously and imperatively to demand such treatment may fall within the competence of an official acquainted with the detailed bookkeeping of a single College. This rearrangement will be attempted in some of the tables comprised in this paper; but it will be restricted within narrow limits. It will only be made where it seems to be plainly requisite, and misunderstanding cannot be otherwise avoided.

The first table which now, as in 1895, I shall submit, is one showing the "External Receipts and Expenditure" of the Colleges (and the University). These will be given for the three years 1883, 1893, and 1903. In the first set of columns the Gross External Receipts are entered, in the second the External Expenditure is presented, and, by the subtraction of the second set of figures from the first, we reach, for each of the three years in succession, what may be described as the Net External Receipts.

## II.—EXTERNAL RECEIPTS AND EXPENDITURE OF THE COLLEGES.

The Gross External Receipts of the Colleges (together with the University) show, according to this table, an increase in 1903 of 29,797*l.* on the figures of 1893, and of 16,343*l.* on the figures of 1883. The Net External Receipts of the Colleges (and the University) exhibit in 1903 an increase of 15,871*l.* on 1893, or somewhat more than nine per cent.; but, contrasted with that of 1883, the total for 1903 is 13,737*l.* less, and a decrease is thus evident of some six per cent. Taking the Colleges alone (apart from the University), the Gross External Receipts show an increase in 1903 of 29,850*l.* on 1893, and of 18,184*l.* on 1883, while the Net External Receipts exhibit in 1903 an increase of 16,566*l.* on 1893, and a decrease of 10,311*l.* compared with 1883. In their Gross External Receipts all but five Colleges have raised their figures since 1893, and in their Net External Receipts all but five have

TABLE I.—*External Receipts and Expenditure (omitting Shillings and Pence), 1883, 1893, and 1903.*

Colleges.	A. Gross External Receipts.			B. External Expenditure.			C. Net External Receipts.		
	1883.	1893.	1903.	1883.	1893.	1903.	1883.	1893.	1903.
University .....	£ 7,110	£ 5,790	£ 7,499	£ 1,933	£ 1,960	£ 2,560	£ 5,177	£ 3,830	£ 4,940
Balliol .....	6,427	5,849	6,218	1,546	1,992	1,458	4,881	3,857	4,760
Merton .....	19,157	24,668	28,052	5,280	12,008	13,358	13,877	12,660	14,694
Exeter .....	5,078	4,435	4,982	1,326	959	883	3,752	3,476	3,199
Oriel .....	11,888	9,657	10,511	6,230	6,091	5,614	5,658	3,566	4,897
Queen's .....	14,653	14,402	16,408	4,431	5,786	6,891	10,222	8,616	9,517
New .....	32,453	28,736	30,225	14,146	13,503	14,597	18,307	15,233	15,628
Lincoln .....	8,753	4,794	5,768	1,357	1,534	1,635	4,396	3,260	4,131
All Souls .....	27,870	24,486	25,947	7,924	10,986	11,413	20,446	13,560	14,534
Magdalen .....	38,576	47,866	57,180	15,062	23,489	30,388	23,514	24,367	26,791
Brasenose .....	10,250	13,492	15,740	4,323	4,515	5,419	5,827	8,977	10,321
Corpus .....	19,057	14,090	15,057	7,109	4,840	4,410	11,948	9,859	10,647
Christ Church .....	49,339	42,221	40,970	21,971	16,819	14,599	27,368	25,402	26,371
Trinity .....	6,955	6,592	6,289	1,759	1,740	2,324	5,196	4,852	3,965
St. John's .....	20,654	19,927	24,491	8,489	11,495	11,299	12,165	8,432	13,192
Jesus .....	11,741	10,144	13,156	3,289	2,480	5,815	8,452	7,664	7,341
Wadham .....	5,362	4,651	4,485	1,162	2,083	2,392	4,200	2,568	2,093
Pembroke .....	3,834	3,462	3,415	574	574	907	3,492	2,888	2,508
Worcester .....	5,099	3,665	3,886	1,791	1,467	1,603	3,245	2,198	2,283
Total .....	301,193	289,327	319,377	109,079	124,284	137,565	192,113	165,046	181,812
The University .....	17,207	18,419	19,366	2,894	3,837	4,479	14,313	11,582	10,887
Tota .....	318,400	304,946	334,743	111,964	128,118	142,044	206,436	176,838	192,699

<sup>a</sup> Including 69*l*. as interest on Pension Fund and Local Rates Composition Fund.

<sup>b</sup> Including 545*l*. as interest on Pension Fund and Local Rates Composition Fund.

<sup>c</sup> Including an advance of 1,500*l*. from Land Commissioners (now the Board of Agriculture) for College Buildings.

<sup>d</sup> Including 124*l*. as interest on furniture.

<sup>e</sup> Including 153*l*. as interest on furniture.

<sup>f</sup> Including 123*l*. as interest on furniture.

<sup>g</sup> Including 147*l*. as interest on furniture.

<sup>h</sup> Including 117*l*. as interest on furniture and electric light installation.

similarly advanced; and of these five, four are identical in both cases. In their Gross External Receipts all but eight have, on the other hand, decreased their figures since 1883, and in their Net External Receipts all but four have similarly declined.

In the previous paper of 1895 attention was specially directed to three Colleges, as affording examples of exceptions from the general rule of declining revenue, and to the three then distinguished a fourth has now to be added. These four Colleges have grown in their Gross External Receipts since 1883 by 36,826*l.* This increase represents an advance of some forty-two per cent. Since 1893 the increase has amounted to 19,510*l.* Their Net External Receipts have similarly increased since 1893 by 10,562*l.*, and since 1883 by 9,615*l.* In the one period the percentage of increase has been somewhat less than twenty, in the other and longer period it has amounted to seventeen or eighteen per cent. One College alone of the four has increased its Gross External Receipts since 1883 by little less than fifty per cent., and another College has nearly doubled its Net External Receipts.

If we exclude these four Colleges from our calculations, the Gross External Receipts of the other Colleges alone show an increase on the figures of 1893 of 10,340*l.*, instead of 29,850*l.*; and a comparison of 1903 with 1883 discloses a decrease of 18,642*l.* as contrasted with the increase of 18,184*l.* obtained by including the four Colleges. In fact, by excluding the Colleges, the increase on 1893 becomes only about a third as large, and the increase on 1883 is actually converted into a decrease. In the case of the Net External Receipts the exclusion of the four Colleges similarly reduces the increase on 1893 from 16,566*l.* to 6,004*l.*, and the percentage becomes little more than five instead of ten, while the decrease from the figures of 1883 is enlarged from 10,311*l.* to 19,926*l.*, and the percentage becomes almost half as much again.

If, for the purposes of exact comparison with the previous paper of 1895, we exclude the three Colleges then distinguished without adding the fourth, the Gross External Receipts in 1903 show an increase over 1893 of 14,904*l.* instead of 29,850*l.*, and a decrease from 1883 of 14,805*l.*, instead of an increase of 18,184*l.*; and the Net External Receipts show similarly an increase on 1893 of 10,764*l.* as compared with 16,566*l.*, and a decrease from 1883 of 18,899*l.* as compared with 10,311*l.* The exclusion of the exceptional Colleges is thus attended by noticeable results, whether the three or the four be removed from the calculation; and, as we shall have occasion to observe later, such exclusion is necessary to a full and just appreciation of the total decline in the agricultural

revenues of the Colleges. For in the case of these particular Colleges a diminution of prospective or actual agricultural income has been concealed and compensated by a change in the tenure on which a considerable proportion of their lands have been held. That change has been the substitution for the beneficial lease of rack rent tenancies.

Yet it should be remarked at the very outset that in the previous paper, when the three Colleges had been excluded, the decrease in the Gross External Receipts during the earlier period then examined—from 1883 to 1893—amounted to some 29,000*l.*,<sup>4</sup> and in the Net External Receipts a similar decrease of some 29,000*l.*<sup>5</sup> was found. For the later period now to be investigated more particularly—that from 1893 to 1903—the corresponding results have been an increase of 14,904*l.* and an increase of 10,764*l.* On a *prima facie* view accordingly it would appear that the tide of depression had in this later period turned. The Gross External Receipts have advanced again about half the distance that they had receded, and the Net External Receipts have recovered some portion at any rate of their lost ground. An investigation, however, of the Gross and Net External Receipts of the Colleges (and the University) is no more than the introduction to a thorough inquiry into their Agricultural Revenues; for the items of which the External Income and Expenditure are composed relate to other descriptions of revenue and outgoings besides those concerned with agricultural property alone. We may, therefore, forthwith turn our attention more particularly to the items which relate more specially to agriculture. We are occupied at present with the receipt side alone of the published accounts. The second table will accordingly give the figures for 1883, 1893, and 1903 of (1) the Receipts from Lands let at Rack Rent, (2) the Receipts from Lands let on Beneficial Lease, and (3) the Receipts from Tithe; and afterwards, by combining these figures, in Table III, we shall be able to ascertain (1) the Receipts from Lands, (2) the Receipts from Lands let at Rack Rent and Tithe, and (3) the Receipts from Lands and Tithe.

### III.—RECEIPTS FROM AGRICULTURAL PROPERTY.

From the figures contained in the first set of columns in Table II (A) we see that the Receipts from Lands let at Rack Rent for the Colleges (excluding the University) show an increase in 1903 on 1893 of 1,856*l.*, and a decrease from 1883 of 4,445*l.* The percentages in the two cases respectively are about one and a quarter, and three. Including the University, the increase on 1893

<sup>4</sup> Exactly 29,709*l.*

<sup>5</sup> Exactly 29,663*l.*

TABLE II.—*Receipts from Lands Let at Rack Rent and on Beneficial Lease and from Tithe (omitting Shillings and Pence), 1883, 1893, and 1903.*

Colleges.	A. Lands Let at Rack Rent.			B. Lands on Beneficial Lease.			C. Tithe.		
	1883.	1893.	1903.	1883.	1893.	1903.	1883.	1893.	1903.
University.....	£ 3,538	£ 3,404	£ 3,104	£ 7	£ —	£ —	£ 870	£ 301	£ 70
Balliol a.....	2,962 a	2,014 a	1,718 a	—	—	—	1,620	1,170	1,079
Merton a.....	7,705	10,159 a	11,709 a	1,662	426	28	8,429	4,232	3,811
Exeter.....	3,701	2,560	2,375	—	—	—	807	449	383
Oriel.....	7,281	5,700	6,076	683	392	421	1,620	1,033	887
Queen's.....	9,316 c	7,944	6,845	333	220	210	350 b	337 b	355 b
New.....	19,174 d	16,611	15,338	81	—	—	9,680	7,152	6,682
Lincoln a.....	3,633	2,540 a	2,515 a	—	—	—	288	187	181
All Souls.....	19,024 e	15,256 a	13,603 a	237	—	—	2,310 f	1,768	1,625
Magdalen.....	15,014	25,939 g	20,633	3,489	83	37	2,413	1,147	1,147
Brazenose a.....	2,951 a	6,226 a	7,239 a	1,617	746	255	24	11	301
Corpus.....	16,832	11,897	10,965	280	—	—	152	—	163
Christ Church.....	21,847	20,694	18,461	3,465	374	163	16,124	18,649	15,644
Trinity.....	2,680	2,538	2,698	—	—	—	3,061	2,302	2,082
St. John's.....	8,889	7,841	9,588	449	18	10	684	480	422
Jesus.....	4,833	4,060	4,065	—	—	—	2,091	1,123	1,524
Wadham.....	3,420 h	2,686	2,461	—	—	—	1,093	743	429
Pembroke a.....	2,418	1,982	1,702 a	—	—	—	354	227	211
Worcester.....	4,192	2,886	2,948	—	—	—	—	—	—
Total.....	158,528	152,227	154,083	12,483	2,259	1,123	40,426	41,851	37,558
The University.....	8,842	6,971	6,867	—	—	—	819	738	674
Total.....	167,370	159,198	160,950	12,483	2,259	1,123	50,245	42,589	38,232

a These Colleges reckon under the item (12) of external expenditure, viz. "other expenditure on estates," sums for abatements and remissions, and in this Table these sums have been deducted from the receipts from Lands let at Rack Rent, in harmony with the practice followed by other Colleges.

b Charged on Rectory of Parish for Provost's stipend.

c Under "Other Properties" appears an item "Lacombe farm estate," which is not included in this Table (768/).

d Under "Other Properties" appears an item "farming profits 174/," which is not included in this Table.

e This sum is reached by deducting, as shown in the accounts for 1893, the arrears of rent not paid, and the abatements made, and adding the arrears of 1892 paid in 1893, and the percentages paid by the tenants on building and drainage improvements.

f Calculated similarly to receipts from lands.

g A sum of 884/ for loss on farms in hand has been deducted from the Receipts of Lands at Rack Rent to reach the sum given in this Table.

h Under "Other Properties" appears a sum of 131/., being "profit on cultivation of vacant farms," which is not included in this Table.

TABLE III.—*Receipts from Lands and Tithe (omitting Skillings and Pence), 1883, 1893, and 1903.*

	A. Lands.		B. Lands at Rack Rent and Tithe.			C. Lands and Tithe.		
	1883.	1893.	1883.	1893.	1903.	1883.	1893.	1903.
	£	£	£	£	£	£	£	£
University .....	3,565	3,404	4,428	3,705	3,174	4,435	3,705	3,174
Balliol .....	2,562	2,014	4,182	3,184	2,797	4,182	3,184	2,797
Merton .....	9,367	10,585	13,134	14,391	15,320	14,796	14,817	15,646
Exeter .....	3,701	2,550	4,508	2,999	2,758	4,508	2,999	2,758
Oriel .....	7,964	6,092	9,151	7,070	7,318	9,884	7,462	7,789
Queen's .....	10,149	8,164	10,684	8,601	7,435	11,017	8,721	7,645
New .....	19,255	16,611	28,754	23,763	22,020	28,835	23,763	22,020
Lincoln .....	3,633	2,540	3,919	2,727	2,726	3,919	2,727	2,726
All Souls .....	19,411	15,256	21,334	17,022	15,228	21,721	17,022	15,228
Magdalen .....	19,003	26,022	17,927	27,121	31,780	21,416	27,204	31,817
Brasenose .....	4,598	6,972	2,975	6,237	7,560	6,922	6,983	7,815
Corpus .....	16,112	11,897	15,884	11,897	11,130	16,164	11,897	11,180
Christ Church .....	24,812	20,468	37,471	38,743	34,095	40,386	39,117	34,258
Trinity .....	2,680	2,538	5,731	4,840	4,750	5,731	4,840	4,751
St John's .....	9,338	7,859	9,473	8,271	10,010	9,922	8,289	10,020
Jesus .....	4,833	4,060	6,924	5,183	5,589	6,924	5,183	5,589
Wadham .....	3,420	2,586	4,513	3,329	2,890	4,513	3,329	2,890
Pembroke .....	2,416	1,982	2,770	2,209	1,913	2,770	2,209	1,913
Worcester .....	4,192	2,886	4,192	2,886	2,948	4,192	2,886	2,948
Total .....	171,011	154,486	207,954	194,078	191,641	220,417	196,317	192,764
The University .....	8,842	6,971	9,661	7,709	7,541	9,661	7,709	7,541
Total .....	179,853	161,457	217,615	201,787	199,182	230,098	204,046	200,305

becomes 1,752*l.* and the decrease from 1883 6,420*l.* If, however, we remove from the calculation the three Colleges which were separated in the earlier paper, a decrease both from 1883 and from 1893 is shown. For the remainder of the Colleges (exclusive of the University) the decrease from 1893 is 5,421*l.*, and from 1883 27,876*l.* If the fourth College, previously indicated, be now added to the three, the decrease from 1893 is 7,168*l.*, and from 1883 28,575*l.* The percentages are respectively about seven and twenty-three. By the exclusion of these Colleges, accordingly, an increase of about one and a quarter per cent. is converted into a decrease of about seven per cent.; and a decrease of about three per cent. is raised to a decrease of some twenty-three per cent.

An examination of the second set (B) of columns in the table supplies the essential means for attaining to a fuller estimate of the alteration in the agricultural income of the Colleges. It also discloses the real reason for the noticeable results produced by excluding from the calculation the four Colleges which exhibit an increase in their net external receipts for 1903, when contrasted with the earliest year—that of 1883—for which the accounts have been published. This second set of columns shows that the Receipts from Lands let on Beneficial Lease have fallen from 2,259*l.* in 1893, and 12,483*l.* in 1883, to 1,123*l.* in 1903. In the case of four Colleges alone do the receipts arising from this source extend at the present time to three figures, and this form of tenure of College lands may be declared now to have come within measurable distance of total extinction. But this substitution of rack-rent tenancies for beneficial leases would, in the natural course of things, have been productive of a large increase of revenue; for under the older system a great portion of the rent was taken as a fine paid on the renewal of the lease, the responsibility for repairs was borne by the tenant and not by the landlord, who was, for the most part, in the easier, if less lucrative, position of a rent-charger, and the reserved rent annually obtained represented but a small portion of the entire value of the property. For such reasons the total receipts from lands, on whatever tenure they are let, which are given in the first set (A) of columns in Table III, afford a fairer measure of the change in agricultural income.

Excluding the University, an increase of 720*l.* (instead of 1,856*l.*) is shown by this table in the Total Receipts from Lands in 1903, compared with 1893. Compared with 1883, the decrease of 4,445*l.* in the Receipts from Lands let at Rack Rent alone becomes 15,805*l.* in those from Lands of both descriptions, or little less than ten per cent. The bulk of the beneficial leases, it should be noticed, for reasons which will be more fully examined later, came into hand

between 1883 and 1893, and not between 1893 and 1903. Including the University, the increase on 1893, and the decrease from 1883, respectively become 616*l.* and 17,780*l.* Again, excluding the three Colleges noted before, the decrease in 1903 from 1893 is 5,620*l.*, and from 1883, 32,756*l.*; and, excluding the four, these figures become 7,359*l.* and 33,016*l.*, and the percentages of diminution are some seven and twenty-five per cent. respectively.

It should, however, be remarked once more, that the changes occurring in the two periods 1883-93 and 1893-1903 are in noticeable contrast to one another. Between 1883 and 1893 the Receipts from Lands for the Colleges as a whole diminished by 16,525*l.*, while between 1893 and 1903 they increased by 720*l.*; and, excluding the three Colleges, the decrease between 1883 and 1893 was 27,136*l.*, and between 1893 and 1903 5,620*l.* The three Colleges, however, thus excluded exhibited increases in 1903 on 1893 of 1,150*l.*, 4,648*l.*, and 542*l.* on rentals amounting in the earlier year of the comparison to 10,585*l.*, 26,022*l.*, and 6,972*l.* respectively. The percentages of increase were accordingly about eleven, eighteen, and eight. The fourth College, which was also excluded above, showed an increase of 1,739*l.* on a rental of 7,859*l.*, or some twenty-two per cent. In the previous period between 1883 and 1893 this College had sustained a diminution in rental, while the other three had established advances of 1,218*l.*, 7,019*l.*, and 2,374*l.* on rentals amounting in 1883 to 9,367*l.*, 19,033*l.*, and 4,598*l.* respectively. The percentages of these increases were about thirteen, thirty-seven, and fifty per cent. By far the larger additions to the rentals were accordingly obtained also in the earlier of the two periods.

This result might have been expected as a necessary or probable consequence of the fact that the great diminution in the Receipts from Lands let on Beneficial Lease took place, as we have noted, during that earlier period. The three Colleges which showed an increase in their Total Receipts from Lands in 1893 on 1883 are conspicuous among the whole number of the Colleges for decreases in the Receipts from Lands let on Beneficial Lease, and the change was mainly effected between 1883 and 1893. In the case of one College the Receipts from Lands let on Beneficial Lease were 1,662*l.* in 1883, 426*l.* in 1893, and 26*l.* in 1903. In that of the second the figures for the three years were 3,489*l.*, 83*l.*, and 37*l.*; and in that of a third they were 1,647*l.*, 746*l.*, and 255*l.* The fourth College, now added to the three of the previous paper, had in 1883 a revenue of 449*l.* from this source. In 1893 the receipts were only 18*l.*, and in 1903 they were 10*l.*

Two other Colleges have exhibited diminutions in their Receipts from Lands held by this tenure of 387*l.* and 280*l.* respectively,



and in both cases the change of tenure was accomplished before 1893. But it is to be noted that their total receipts from Lands between 1883 and 1893 fell to the extent of 4,155*l.* on a rental of 19,411*l.*, and of 4,215*l.* on a rental of 16,112*l.*, notwithstanding the change of tenure. Another College experienced a decrease of 113*l.* between 1883 and 1893 in its receipts from such lands, and a further small diminution of 10*l.* between 1893 and 1903. Its total Receipts from Lands fell nevertheless from 10,149*l.* in 1883, to 8,164*l.* in 1893, and again to 7,055*l.* in 1903. Another College enjoyed a revenue from Lands held on Beneficial Lease of 3,465*l.* in 1883, a revenue of 374*l.* in 1893, and a revenue of 163*l.* in 1903. Yet its total receipts from Lands fell, in spite of the change, from 24,812*l.* in 1883 to 20,468*l.* in 1893, and again to 18,614*l.* in 1903.

Of all the nineteen Colleges included in the tables, nine exhibit an increase in their receipts from lands in 1903 over 1893. Of these the increase is inconsiderable in two instances, and amounts to no more than 5*l.* In a third it is 62*l.*, in a fourth 161*l.*, and in a fifth 405*l.* The four remaining cases are those of the Colleges distinguished previously, which show an increase in their net external receipts between the commencement and the close of the whole period of the publication of the annual accounts. In these instances the additions to the Receipts of Lands between 1893 and 1903 amount, we have noticed, to 1,150*l.* on a rental of 10,585*l.*, to 4,648*l.* on a rental of 26,022*l.*, to 542*l.* on a rental of 6,972*l.*, and to 1,739*l.* on a rental of 7,859*l.* Comparing 1903 with 1883, we see that every College, except five, shows a decrease in its Receipts from Lands. The increase in the case of one of these five exceptions is only 19*l.*, and the four remaining instances are furnished by the Colleges previously distinguished.

The precise change which has taken place in the value of agricultural property may perhaps be even more exactly measured by a further reference to the figures of a single College which has derived its external revenue from little else than purely agricultural sources. The disturbing influence of the Beneficial Lease cannot indeed be entirely eliminated here; for this particular College received, as we have noticed previously, 280*l.* from Lands held on this tenure in 1883, and nothing in 1893 or 1903. Its gross external receipts were 19,057*l.* in 1883, 14,690*l.* in 1893, and 15,057*l.* in 1903. The last year thus disclosed an improvement on 1893 of 367*l.*, but exhibited a decrease compared with 1883 of 4,000*l.*, or, measured by percentages, some twenty-one per cent. Its net external receipts were in 1903 797*l.* more than in 1893, and 1,301*l.* less than in 1883. Its receipts from lands in the three years respectively were 16,112*l.*, 11,897*l.*, and 10,965*l.* Thus diminutions

in these receipts in 1903 compared with 1893 of 932*l.*, and compared with 1883 of 5,147*l.*, were evident. The percentages of diminution were respectively about eight and thirty-two.

In the case of other Colleges, which had no Lands let on Beneficial Lease in 1883, 1893, or 1903, we find in 1903 falls of 844*l.* on a rental of 2,562*l.* in 1883, or about a third, of 1,326*l.* on a rental of 3,701*l.*, or more than a third, of 1,088*l.* on a rental of 3,633*l.*, of 768*l.* on 4,833*l.*, of 959*l.* on 3,420*l.*, of 714*l.* on 2,416*l.*, and of 1,144*l.* on 4,192*l.* Comparing 1903 with 1893 in the case of those Colleges which had no Lands let on Beneficial Lease in either of the two years, four of the seven Colleges just mentioned show falls of 296*l.* on a rental of 2,014*l.*, 175*l.* on 2,550*l.*, 125*l.* on 2,586*l.*, and 280*l.* on 1,982*l.*, while in the three other cases there are increases of 5*l.* in either of two instances and of 62*l.* in the remaining instance. Further Colleges show falls during this later period of 300*l.* on 3,404*l.*, of 1,273*l.* on 16,611*l.*, and of 1,653*l.* on 15,256*l.* We may therefore conclude that, if the disturbing factor of the Beneficial Lease be discounted, the occurrence of some general fall in agricultural rental between 1893 and 1903 is demonstrated, but that it is considerably less in magnitude than that which happened between 1883 and 1893.

To gauge, however, the full loss sustained by the Colleges from declining agricultural revenues, the fall in Tithe requires notice, and the prospective rise in income anticipated from the substitution of rack rent tenancies for beneficial leases should evidently be brought into account, so far as it admits of estimate.

#### IV.—THE FALL OF TITHE.

Taking the fall of Tithe alone, the Receipts from Tithe (shown in Division C of Table II) were for the Colleges (exclusive of the University) in 1883, 49,426*l.*; in 1893, 41,851*l.*; and in 1903, 37,558*l.* In three (or four) instances<sup>6</sup> alone did the receipts for 1903 show an increase over those for 1893, and in two cases only did they exhibit an increase over those for 1883. The fall between 1883 and 1893 amounted to 7,575*l.*, and between 1893 and 1903 to 4,293*l.*, and the total fall between 1883 and 1903 was thus 11,868*l.*, or not very much less than a quarter of the original sum. Between 1893 and 1903 the decrease was a little more than ten per cent. compared with a diminution of fifteen or sixteen per cent. between 1883 and 1893.

Adding together (as in Division B of Table III) the Receipts from Lands let at Rack Rent and those from Tithe, the difference

<sup>6</sup> In one of these instances the Receipts in 1893 were nil.

between 1903 and 1893 is 2,437*l.*, and between 1903 and 1883, 16,313*l.* Taking (as in Division C of the same Table III) the Total Receipts from Land and Tithe, the differences are respectively 3,573*l.* and 27,673*l.* Thus, as in the case of the Receipts from Lands, where an increase of 720*l.* was apparent in 1903 when contrasted with 1893, and a decrease of 15,805*l.* when compared with 1883, the marked fall in this further source of agricultural revenue occurred also in the earlier and not in the later of the two periods. But the inclusion of the Receipts from Tithe in the comparison suffices to convert a small increase in the Receipts from Lands alone between 1893 and 1903 into a decrease of 3,573*l.*; and, similarly, the effect of such inclusion on the Receipts from Lands let at Rack Rent alone is to change an increase of 1,856*l.* into a decrease of 2,437*l.* In the case of one College, whose revenue is very largely dependent upon Tithe, the Receipts for 1903 from this source amounted to little more than two-thirds of those of 1883, and the diminution between 1893 and 1903 was more than ten per cent. This College has exhibited a small increase in its Receipts from Lands between 1883 and 1903, but the fall in its Receipts from Tithe has nevertheless caused a decrease of more than one-sixth in its income from Lands and Tithe together. The official figure of the septennial averages, it may be added, was in 1883 almost at par (being exactly 100*l.* 4*s.* 9½*d.*); in 1893 it was 74*l.* 15*s.* 2¾*d.*, and in 1903 it was 69*l.* 7*s.* 5*d.*

#### V.—THE BENEFICIAL LEASE AND PROSPECTIVE INCOME.

The Beneficial Lease, as we have seen, is rapidly disappearing. It has already taken the position, in the comparatively few instances in which it is still discovered, of an exceptional survival of what was once a prevailing mode of tenure. The Receipts from Lands held on Beneficial Lease by the Colleges amounted in 1903 to 1,123*l.*, as contrasted with 12,483*l.* in 1883, and concerned no more than eight of the nineteen Colleges. Similarly, the Receipts from Fines and Fine Loans were only 467*l.* in 1903, as compared with 11,887*l.* in 1883 (see Table VII), and affected the revenues of two Colleges alone. The former of these, the Fines, were paid on the renewal of the Beneficial Leases, and were at one time a considerable source of revenue, and the years when they accrued in large amounts were consequently marked by noticeable additions to the total income. The latter, the Fine Loans, would be raised to compensate the beneficiaries concerned for the loss of a fine, or fines, consequent on a refusal to renew a Beneficial Lease. Posterity would gain, it was considered, in the prospective increase of receipts to be derived from the new rack rent tenancy which would follow the

expiration of the lease; but the existing generation would forego the fine which would have accompanied its renewal. A diminution therefore in the revenue arising from these two sources affords corroborative evidence of the decreased importance of the Beneficial Lease. The Receipts from Houses so let, as we shall notice later, have also fallen; but the fall has not been so considerable. The original total was much smaller, the present total is more than half that figure. In 1883 the amount, as we shall see, was 2,436*l.*, in 1893 it was 1,774*l.*, and in 1903 it was still 1,368*l.*

The extent to which the anticipations of an increased income through the substitution of Rack Rent Tenancies for Beneficial Leases have been neutralised and disappointed by the decline in agricultural rentals, may perhaps be gauged more satisfactorily in connection with the three Colleges specially distinguished than it could be in connection with the others. At the time of the Duke of Cleveland's Commission in 1872, some estimates were formed by the Commissioners, on the basis of material supplied for the year 1871, of the prospective income which might be expected to accrue in successive quinquennial periods. For one of the three Colleges to which we have alluded the calculation made by the College did not extend beyond 1890, and for another the calculation ended with 1895, and in one of these two cases the results of the termination of copyholds, and in the other the consequences of the expiration of the leases of houses and of a tithe rent-charge,<sup>7</sup> were also brought into account. For the ten years between the end of 1880 and the end of 1890 a cumulative increase of 7,848*l.* was estimated in the case of the one College and of 5,708*l.* in the case of the other, to which a further sum of 2,339*l.* was added for the additional five years ending with the 31st December, 1895. The actual increases in the Receipts from Lands between 1883 and 1893 obtained by these two Colleges were 1,218*l.* and 2,374*l.* respectively. In the latter of the two instances the Receipts from Houses had increased by 1,244*l.*, and, if this figure be added to the increase in the Receipts from Lands, a total actual increase of 3,618*l.* is shown, as contrasted with an estimated increase of 5,708*l.* Even by 1903 the increase in the case of the former College in the receipts from lands was only 2,368*l.*, and this figure does not compare very favourably with an estimated increase between 1880 and 1890 of 7,848*l.*, even if we suppose that the fulfilment of the expectation had been delayed, and do not allow anything for the replacement of copyholds by rack rent tenures. In the case of the third of the three Colleges the material supplied to

<sup>7</sup> Which was included in the lease of certain lands let on Beneficial Lease.

the Commissioners by the College authorities enables the comparison to be carried to a later date, although the probable additional receipts from Houses were included in the calculation together with the anticipated increased revenue from Lands. The cumulative increase which, it was believed, would be realised between the end of 1880 and the end of 1900 was 20,053*l.* A further addition of 1,600*l.* after 1900 was anticipated, and thus a grand total of 21,653*l.*<sup>8</sup> was reached. In 1903 the Receipts by this College from Lands let on Beneficial Lease had fallen to 37*l.*, while in 1883 they had amounted to 3,489*l.*, so that by the later date the full change was practically accomplished by the College in the tenure of its landed property. In the case of its Houses, on the other hand, 267*l.* was received in 1903 from Houses let on Beneficial Lease, as contrasted with 982*l.* in 1883, and the process was still incomplete. The actual increase between 1883 and 1903 in the Receipts from Lands was 11,667*l.*, and from Houses let at Rack Rent and on Beneficial Lease 7,893*l.* It would therefore seem that the figures recorded for this College have fairly, though not fully, justified the hopes entertained by the Commissioners, while the experience of the other two Colleges has disappointed in a marked degree the expectations which were raised. In the case of one of these, however, it is curious and interesting to note that the separate anticipation formed of an increased rental from Houses in consequence of the termination of the Leases seems to have been adequately realised.

In 1877 the Colleges were asked to furnish any commentary or correction that they thought to be necessary of the estimates attempted six years earlier; and the criticism of one College, that the statement put forward by the Duke of Cleveland's Commission on the basis of the material supplied to them was misleading, because it neglected to take account of the large deductions required for payment of interest on borrowed money, and for repayment of capital, and the explanation of another College, that the amended statement which was now supplied allowed for necessary deductions (for example, for loss of fines, for charges for fine loans, and for loans for improvements) were both apposite and true. For very considerable expenditure has been entailed to put into order the property once held on beneficial lease, as the Colleges have come into full responsible possession; and the payment of interest and repayment of capital of the loans contracted to compensate the existing members of the corporate bodies for the loss of the fines which would have been received

\* A further sum of 4,582*l.* was estimated as the annual value of copyholds for lives, and an additional amount of 4,174*l.* for beneficial leases of tithe rent charge. These figures added to 21,653*l.* would make altogether 30,409*l.* by Google

on the renewal of the leases have, in effect, been a first charge upon the increased rack rents obtained by their successors. If the outlay on repairs and improvements was often, and perhaps generally, under-rated, the prospective increase of rent was, as events showed, over-estimated. With this latter circumstance alone we are, however, at present concerned, and any correction in the calculations prepared in 1871, which is due to the other deductions noted, is not relevant, at least immediately, to our inquiry. But it may be remarked that in the case of the first of the three Colleges, for which we have attempted a comparison between the estimated and the actual increase, the revised calculation of 1877 reduced the probable increase between 1880 and 1890 to 6,722*l.* The actual increase in the Receipts from Lands between 1883 and 1893 was 1,218*l.*, and between 1883 and 1903 it was only 2,368*l.* In the case of the second of the three Colleges, the revised calculation suggested a reduction of 1,000*l.* on the original estimate. The actual increase between 1883 and 1893 still fell short of the revised figure by about 1,000*l.* By 1900, according to the revised estimate, a total increase of 8,250*l.* in the Receipts from Lands and Houses was anticipated. The actual increase between 1883 and 1903 was 5,499*l.*

These discrepancies between prophecy and fact seem to render it not inappropriate to refer again to the gross calculation quoted in the previous paper for the whole of the Colleges which was made by the Commissioners in their Report of 1874. On the 31st December, 1871, the rental of the Corporate (as distinguished from the Trust) lands of the Colleges then let at Rack Rent amounted to 125,148*l.*, and the estimated annual rack rent value of the lands then let on Beneficial Lease was 107,471*l.* These two sums formed a grand total of 232,619*l.*, whereas the actual Receipts from Lands as stated in the published accounts were in 1883 171,011*l.*, in 1893 154,486*l.*, and in 1903 155,206*l.* One further illustration may perhaps be given in conclusion, although the College in question declared in 1877 that it would not attempt an estimate of prospective increase in income. This increase in the receipts from lands and houses<sup>9</sup> between 1870 and 1900 was, however, placed in 1872 at the figure of 8,418*l.*, and it was also anticipated that an addition would accrue from the expiration of copyholds of 2,454*l.*, making together 10,872*l.* Between 1880 and 1890 the increase in the Receipts from Lands and Houses was put at 4,331*l.*, and between 1880 and 1895 at 4,603*l.* In 1893 the College no longer owned any land let on Beneficial Lease, and no Houses let either on Beneficial or on Long Lease belonged to it, while its receipts from Copyholds

<sup>9</sup> In this estimate Houses let on Long Lease and a Lease of Tithe-rent-charge were taken into consideration.

amounted in 1903 only to 16*l.*, and in 1893 to 24*l.* But between 1883 and 1893 its actual total Receipts from Lands diminished from 16,112*l.* to 11,897*l.*, and by 1903 they had fallen to 10,965*l.* Against this fall an infinitesimal increase from 336*l.* in 1883 to 353*l.* in 1893, and 340*l.* in 1903, in its Receipts from Houses can alone be set. The figures are thus no less significant than the others which have been previously quoted. It is not merely the fact that no actual increase was apparent in 1903, but a prospective addition of some 4,331*l.* between 1880 and 1890 was transformed into a positive decrease between 1883 and 1893 of 4,198*l.*

#### VI.—THE RECEIPTS FROM LANDS FOR SINGLE YEARS, 1894-1903.

The next two tables will show the Receipts from Lands let at Rack Rent and from Lands as a whole, for each year of the period 1894-1903.

The figures contained in Table V show that the Receipts from Lands for the Colleges (exclusive of the University) rose from 154,486*l.* in 1893 to 156,894*l.* in 1894. They fell to 152,630*l.* in 1895. They fell still further in 1896 to 151,419*l.*; but this was the lowest point reached during the period, although 151,513*l.* was the total for 1898. In 1897 a small rise took place to 152,221*l.*, in 1899 a more decided rise occurred to 154,725*l.*, and in the following year, 1900, the figure of 157,652*l.* was reached. This was the highest point attained throughout the period, as 151,419*l.* in 1896 was the lowest. In 1901 the total fell to 153,553*l.*, in 1902 it rose to 156,489*l.*, and in 1903 it fell again to 155,206*l.* This decline in the concluding year of the decade discloses a portion of the effect produced by the peculiarly wet season of that year; but a further portion has in all probability yet to manifest its presence in the figures to be published for 1904.

If, following the precedent set in the previous paper, we substitute an average drawn from the figures of three years for those relating to a single year alone, the general results will not perhaps be affected very greatly, although some noteworthy differences will appear in some particular comparisons. In the case of the Gross External Receipts of the Colleges and the University the average for the three years 1901-03 is 333,039*l.*,<sup>10</sup> while the figure for 1903 alone is 334,743*l.* In the case of the Net External Receipts the average is 189,646*l.*, while the figure for the single year is 192,699*l.* Excluding the University, the averages are 317,081*l.* and 178,578*l.*, as contrasted with 319,377*l.* and 181,812*l.* for the single year. The average Net External

<sup>10</sup> Cf. Table XX in Appendix.

TABLE IV.—*Receipts from Lands Let at Rack Rent (omitting Shillings and Pence) for each Year 1894-1903.*

	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
	£	£	£	£	£	£	£	£	£	£
University .....	2,985	3,460	3,806	3,175	3,397	3,448	3,442	3,380	3,383	3,104
Balliol .....	2,071	2,115	2,045	1,993	1,959	1,798	1,778	1,731	1,783	1,718
Merton .....	11,122	10,975	10,647	10,617	10,837	10,957	11,253	11,277	11,779	11,709
Ezter .....	2,652	2,563	2,484	2,497	2,576	2,419	2,588	2,527	2,570	2,375
Oriel .....	6,558	5,978	5,963	6,152	6,123	6,240	6,221	6,337	6,199	6,076
Queen's .....	8,119	7,260	7,006	7,717	7,311	7,752	7,699	7,618	7,112	6,845
New .....	16,321	16,064	15,701	16,625	16,208	16,112	16,449	15,809	15,816	15,338
Lincoln .....	2,531	2,450	2,524	2,387	2,435	2,549	2,637	2,508	2,649	2,545
All Souls .....	15,743	14,475	16,044	14,616	14,098	13,874	15,391	13,942	13,558	13,603
Magdalen .....	27,520	26,584	26,011	25,991	26,879	28,352	28,420	28,481	31,146	30,633
Braenose .....	6,367	6,874	6,904	7,032	6,899	7,065	7,125	7,047	7,800	7,259
Corpus .....	12,528	12,108	12,078	12,100	10,485	11,156	11,478	11,545	11,027	10,965
Christ Church .....	20,655	20,320	19,021	19,340	19,299	20,126	20,823	18,670	19,046	18,451
Trinity .....	2,530	2,353	2,241	2,241	2,446	2,449	2,464	2,486	2,598	2,698
St. John's .....	7,156	7,160	7,242	7,454	7,667	8,082	7,917	7,830	8,214	9,588
Jesus .....	3,749	4,007	3,471	4,185	4,510	3,642	3,830	4,087	3,794	4,065
Wadham .....	2,128	2,528	2,608	2,146	2,287	2,520	2,462	2,452	2,490	2,461
Pembroke .....	1,657	1,670	2,159	1,987	2,108	2,046	1,722	1,928	1,954	1,702
Worcester .....	2,517	2,633	2,777	2,628	2,781	2,810	2,860	2,869	2,893	2,948
Total .....	155,214	151,365	150,132	150,883	150,275	153,397	156,554	152,469	155,311	154,083
The University .....	6,889	6,420	7,044	7,029	6,631	7,394	7,782	7,454	7,856	6,867
Total .....	162,103	157,785	157,176	157,912	156,906	160,791	164,336	159,923	163,167	160,950



TABLE V.—*Receipts from Lands (omitting Shillings and Pence) for each Year 1894-1903.*

	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
University .....	£ 2,985	£ 3,460	£ 3,806	£ 3,175	£ 3,397	£ 3,448	£ 3,442	£ 3,330	£ 3,383	£ 3,104
Balliol .....	2,071	2,115	2,045	1,998	1,959	1,798	1,778	1,781	1,798	1,718
Merton .....	11,416	11,051	10,724	10,645	10,864	10,983	11,280	11,803	11,805	11,785
Exeter .....	2,653	2,563	2,484	2,497	2,576	2,419	2,583	2,527	2,570	2,375
Oriel .....	6,995	6,355	6,351	6,845	6,608	6,677	6,643	6,759	6,620	6,497
Queen's .....	8,357	7,498	7,240	7,918	7,528	7,989	7,909	7,823	7,321	7,055
New .....	16,321	16,054	15,701	16,625	16,208	16,112	16,449	15,809	15,816	15,338
Lincoln .....	2,531	2,450	2,524	2,387	2,435	2,549	2,637	2,508	2,649	2,545
All Souls .....	15,748	14,475	16,044	14,616	14,068	13,874	15,391	13,942	13,558	13,608
Magdalen .....	27,603	26,668	26,082	26,044	26,916	28,389	28,457	28,518	31,183	30,670
Brasenose .....	6,778	6,941	7,156	7,287	7,158	7,320	7,882	7,302	7,555	7,514
Corpus .....	12,528	12,108	12,078	12,100	10,485	11,156	11,478	11,545	11,027	10,965
Christ Church .....	20,913	20,533	19,268	19,680	19,494	20,452	20,955	18,792	19,265	18,614
Trinity .....	2,530	2,353	2,241	2,241	2,446	2,449	2,464	2,487	2,599	2,699
St. John's .....	7,175	7,168	7,260	7,472	7,685	8,092	7,930	7,841	8,224	9,598
Jesus .....	3,749	4,007	3,471	4,185	4,510	3,642	3,830	4,087	3,794	4,065
Wadham .....	2,128	2,528	2,508	2,146	2,287	2,520	2,462	2,452	2,490	2,461
Pembroke .....	1,657	1,670	2,159	1,987	2,108	2,046	1,722	1,928	1,954	1,702
Worcester .....	2,817	2,633	2,777	2,628	2,781	2,810	2,860	2,869	2,893	2,948
Total .....	156,894	152,630	151,419	152,221	151,513	154,725	157,652	153,553	156,489	155,206
The University .....	6,869	6,420	7,044	7,029	6,631	7,394	7,782	7,454	7,856	6,867
Total .....	163,763	159,050	158,463	159,250	158,144	162,119	165,434	161,007	164,345	162,073

Receipts for the Colleges for the years 1891-93 were, as shown in the previous paper, 172,985*l.*, and for the years 1883-85 187,747*l.*

Passing to the Receipts from Lands, we find that the average for the three years 1901-03 for the Colleges alone was 155,082*l.*, while the receipts for 1903 alone were 155,206*l.* The average for the years 1883-85 was 172,037*l.*, and for the years 1891-93 165,217*l.* For the years 1893-95 it was 154,670*l.* Compared accordingly with the average for the three years 1893-95, the average for the last three years exhibits a slight rise of 412*l.*, contrasted with a rise for the single year 1903 compared with the single year 1893 of 720*l.* But, compared with the average of the final three years (1891-93) of the preceding period, the average of the final three years (1901-03) of the later period shows a fall of 10,135*l.*, and the small increase apparent on a comparison of the single years 1893 and 1903 is thus transformed into a fall of some six per cent. The peculiarly unfavourable character of the single year 1893, contrasted with its predecessors, which was noticed in the previous paper, is in fact concealed from observation in the triennial average (1891-93). In that year the Receipts from Lands for the Colleges were 154,486*l.*, as compared with 173,214*l.* in 1891 and 167,950*l.* in 1892. On the other hand, the figures for the single year 1903 (155,206*l.*) are slightly above the average for the three years 1901-03 (155,082*l.*); and therefore a broad interpretation of this statistical record alone would seem to indicate a continuance of the fall in agricultural revenue during the later period rather than the occurrence of any definitive rise; and this conclusion is, as we have seen, confirmed when allowance has been made for the disturbing influence of the change from beneficial lease to rack rent tenancies.

An extension of the comparison to the earlier period serves to strengthen the impression of a continuing decline. Comparing the average for 1893-95 with that for 1883-85, a fall of 17,367*l.* is shown, and, comparing with the latter average that for 1901-03, a fall of 16,955*l.* is evident. Taking the single years 1903 and 1883 by themselves, the fall amounts to 15,805*l.* The fall, accordingly, disclosed by a comparison of the average for the last three years with the average for the first three years of the whole period 1883-1903, is somewhat more pronounced than that revealed by a contrast of the commencing and concluding years alone. It is however somewhat less considerable than that exhibited when the average for 1893-95 is set beside that for 1883-85. If therefore the view be adopted, which we have already seen reason for supposing to be the more correct, and, when we take the change of tenure into full account, we regard the decline in agricultural rental as con-

tinuing, the rate of diminution, we may decisively affirm, has become less rapid and pronounced in the later period comprised in our inquiry.

The exclusion of the three, or the four, Colleges, the net external receipts of which have increased, largely, as we have noted, through the substitution of rack rent tenancies for beneficial leases, tends to confirm this conception of the continuance, at a slackened rate, of the fall in agricultural rental. Excluding the four Colleges, the average receipts from lands for 1893-95 were 102,590*l.*, and for 1901-03 they were 97,333*l.* A fall of 5,257*l.*, or slightly more than five per cent., is thus shown. Excluding the three Colleges only, the corresponding figures were 109,991*l.* and 105,887*l.* respectively, and a fall of 4,104*l.* is shown. Excluding the four Colleges again, the figures for 1883-85 were 128,301*l.*, and for 1891-93 110,937*l.* Excluding the three Colleges alone, they were 137,652*l.* and 119,613*l.* Excluding, therefore, the four Colleges, the average for 1901-03, compared with that for 1891-93, shows a fall of 13,604*l.*, or somewhat more than eleven per cent. Compared with that for 1883-85, a fall of 30,968*l.*, or some twenty-four per cent., is shown. Comparing 1893-95 with 1883-85, a fall of 25,711*l.*, or some twenty per cent., is evident. Excluding the three Colleges only, the average receipts from Lands for the three years 1901-03, compared with those for 1891-93, show a fall of 13,726*l.*, or again somewhat more than eleven per cent. The average receipts for 1901-03 compared with those for 1883-85 show a fall of 31,765*l.*, or some twenty-three per cent., and the average receipts for 1893-95 compared with those for 1883-85 show a fall of 27,661*l.*, or, once more, some twenty per cent. The results, therefore, do not differ greatly whether the three, or the four, Colleges are excluded, but the exclusion in either case produces a material effect upon the figures resulting from their inclusion. A fall of eleven per cent., comparing the average of the last three years (1901-03) with that of the last three of the preceding period (1891-93), and a fall of twenty-three or twenty-four per cent., comparing the average of the same three concluding years with that of the three commencing years of the whole period (*viz.*, 1883-85), are substituted for falls of six and nine per cent. But the conclusion that the decline during the later period was much less considerable than that which marked the earlier is once again established.

#### VII.—PAYMENTS TO HEADS, FELLOWS, SCHOLARS, AND EXHIBITIONERS.

The same broad inference is generally confirmed by a comparison of the payments made to the Fellows of the Colleges in the three

years 1883, 1893, and 1903 respectively. In 1883 these amounted to 83,820*l.*, in 1893 they had fallen to 74,749*l.*, and in 1903 they were 74,542*l.* The number of Fellows, as indicated by the University Calendar, was the same in the two later years, and differed by one alone from the number for 1883. The payments made to the Heads<sup>11</sup> of the Colleges, as shown by Table VI, were 22,811*l.* in 1883, 20,905*l.* in 1893, and 20,418*l.* in 1903. The payments to Scholars and Exhibitioners were 44,776*l.*, 48,378*l.*, and 50,133*l.* in the three years respectively, and their numbers, as shown by the Calendar, were 570, 658, and 697. It may be noted, as a significant indication of the change which has taken place through the application, under the provisions made by the last University Commission, of an increasing portion of the revenues of the Colleges to University purposes, that the payments made to Fellows (who were not Professors) amounted in 1883 to 70,980*l.*, in 1893 to 59,715*l.*, and in 1903 to 55,994*l.* Between 1893 and 1903, accordingly, these payments fell by 3,721*l.*, but the total payments to Fellows (including Professor Fellows) only diminished in the corresponding period by 207*l.*<sup>12</sup> The following table gives the payments to the Heads of the Colleges, to the Fellows (including Professor Fellows), and to the Scholars and Exhibitioners for the three years 1883, 1893, and 1903. The numbers of the Fellows and of the Scholars and Exhibitioners are also shown, and a statement is furnished of the payments made to Fellows who were not Professors. The total payments to Heads, Fellows (including Professor Fellows), and Scholars and Exhibitioners in the three years were in 1883 151,407*l.*, in 1893 144,032*l.*, and in 1903 145,093*l.* Thus a slight increase of 1,061*l.* was shown in the figures for 1903 contrasted with 1893, and the diminution of 7,375*l.* which occurred between 1883 and 1893 was in some degree recovered.

The general conclusion suggested by this portion of the inquiry may now be summarily stated. So far as the decline in agricultural revenue is concerned, the accounts of the Oxford Colleges seem to have discarded between 1893 and 1903 some of the melancholy significance which they possessed in the earlier period treated in the previous paper. The rate of diminution<sup>13</sup> has sensibly slackened,

<sup>11</sup> Exclusive of that to the Dean of Christ Church, which is not given in the published accounts.

<sup>12</sup> The corresponding figures of the diminutions between 1883 and 1893 were for Fellows alone 11,265*l.*, and for Fellows (including Professor Fellows) 9,071*l.*; and between 1883 and 1903 14,986*l.* and 9,278*l.*

<sup>13</sup> The fall between 1883 and 1893, when we eliminate, so far as is possible, the disturbing influence of the Beneficial Lease, might perhaps be put at about twenty-three to twenty-five, and between 1893 and 1903 at about five to seven per cent.; but these estimates cannot pretend to exact precision.

TABLE VI.—*Payments to Heads, Fellows, Scholars and Exhibitors for the Years 1883, 1893, and 1903 (omitting Shillings and Pence).*

	A. Heads.			B. Fellows.						C. Scholars and Exhibitors.						D. Payments to Fellows not Professors.		
	Payments.			Numbers.			Payments.			Numbers.			Payments.					
	1883.	1893.	1903.	1883.	1893.	1903.	1883.	1893.	1903.	1883.	1893.	1903.	1883.	1893.	1903.	1883.	1893.	1903.
University.....	1,189	1,115	1,103	11	9	12	2,989	2,501	2,384	26	29	29	1,628	1,856	1,955	2,989	2,501	2,384
Balliol.....	653	548	615	13	13	13	2,004	1,893	2,183	63	57	63	3,532	3,107	3,672	2,004	1,893	2,183
Merton.....	1,500	1,500	1,414	21	19	19	6,325	6,450	5,872	22	29	36	1,826	2,113	2,146	2,004	1,893	2,183
Exeter.....	1,256	1,100	1,100	11	9	8	2,646	1,780	1,400	34	35	45	2,197	2,666	2,820	2,646	1,780	1,400
Oriel.....	1,005	1,001	1,094	14	14	11	2,666	1,881	1,782	16	17	18	1,474	1,486	1,652	2,446	1,780	1,400
Queen's.....	1,504	1,001	1,002	14	13	14	3,523	3,015	3,065	42	63	53	4,232	5,186	4,229	2,446	1,780	1,400
New.....	2,225	1,944	1,530	23	25	27	6,556	6,641	8,026	35	33	43	3,605	3,417	3,698	3,569	2,749	5,926
Lincoln.....	644	487	501	9	10	10	3,569	2,265	2,489	22	25	23	1,175	1,382	1,218	3,569	2,749	5,926
All Souls.....	1,500	1,500	1,500	28	34	35	12,389	9,949	9,444	4	4	4	1,806	3,416	2,932	8,108	5,903	4,675
Magdalen.....	2,594	1,800	2,000	24	28	28	10,881	10,615	10,568	30	40	37	2,886	3,416	2,932	8,108	5,903	4,675
Brasenose.....	1,800	1,800	1,800	10	13	14	3,011	3,516	3,384	23	43	46	885	956	1,186	2,811	2,778	2,674
Corpus.....	1,200	1,500	1,500	14	14	13	5,452	4,779	7,314	82	79	74	6,060	5,061	6,426	3,602	3,200	3,167
Christ Church.....	—	—	—	29	29	28	6,702	7,256	7,314	82	79	74	6,060	5,061	6,426	3,602	3,200	3,167
Trinity.....	1,053	1,200	709	9	10	10	2,035	2,525	2,302	19	32	35	1,930	2,286	2,395	2,035	2,525	2,302
St. John's.....	1,584	1,319	1,319	18	17	17	4,544	4,322	4,171	30	37	53	3,177	3,282	3,696	4,544	3,889	3,745
Jesus.....	689	930	930	11	10	9	3,321	3,196	2,611	22	25	30	3,842	3,850	5,278	2,921	2,786	2,211
Wadham.....	1,089	1,135	1,135	11	8	7	1,787	1,200	1,110	17	17	19	1,412	1,794	1,891	1,587	1,100	1,010
Pembroke.....	800	630	800	9	7	6	1,972	1,575	1,146	23	27	27	1,435	2,061	1,985	1,972	1,575	1,146
Worcester.....	800	675	675	12	8	9	1,398	400	436	24	27	32	950	1,500	1,442	1,388	400	436
Total.....	22,811	20,905	20,418	291	290	290	83,820	74,749	74,542	570	638	697	44,776	48,378	50,133	70,980	59,715	55,904

\* Not stated in accounts; now (cf. Whitaker's almanack) 3,000l. The numbers of the Fellows and Scholars include all those enumerated in the University Calendar, but some of their emoluments may be charged on Trust Funds and not included in the figures given above. The payments to the Fellows in Division B include the payments to Professors (including Professor Fellows); and the payments to Scholars and Exhibitors in Division C include the payments to Exhibition Funds.

if the decrease should be described as continuing from the commencement to the termination of the time during which these accounts have hitherto been published. It has not yet perhaps been definitely arrested; and a bare comparison of the figures for the first and the last single years of the whole series serves to exhibit the magnitude of the proportions assumed by the loss of actual or prospective income. Many developments of fresh University activity contemplated by the last Commission have been checked; it has even become impossible to maintain in their full strength Collegiate functions dependent on endowments which the Commissioners did not propose to apply to a purpose other than that to which they had been before devoted. Nor do these figures of the published accounts furnish a complete conspectus of the decline in agricultural income. The depression began before the commencement of this publication; and it is noticeable that the most discouraging reports, which were given in the newspapers, of the peculiarly wet season of 1903, did not fail to note an improvement upon the disastrous record of the black year of 1879. The sufferings of that year coincided with the commencement of agricultural depression, and by 1883, when the accounts began to be published, a decline in rental had become already an accomplished fact. The process, however, had yet to receive an extension which few anticipated.

The accounts of my own College, which I may perhaps examine in fuller detail when a complete fifteen years have passed since the termination of the quarter of a century investigated in a former paper read to the Society,<sup>14</sup> point, I may now briefly notice, to the same general conclusion. They show that the fall in agricultural rental has continued during the last ten years at a diminishing rate when compared with that obtaining before. The gross rental from Lands (exclusive of one Trust Estate) was in 1903 6,937*l.*, as compared with 7,526*l.* in 1893. In 1883 it was 8,851*l.* The fall in the later period was accordingly 589*l.*, as contrasted with 1,325*l.* in the earlier. In the case of one agricultural estate the figures of the rental for 1883, 1893, and 1903 respectively were 1,515*l.*, 1,026*l.*, and 794*l.* In the case of another they were 2,346*l.*, 1,805*l.*, and 1,662*l.*, and in the case of a third they were 1,554*l.*, 1,138*l.*, and 986*l.* The rents of some individual farms in the same three years respectively were, in one instance, 303*l.*, 245*l.*, and 220*l.*, in another 270*l.*, 145*l.*, and 150*l.*, and in a third 545*l.*, 380*l.*, and 220*l.* In a fourth instance the figures were 132*l.*, 132*l.*, and 100*l.*, and in a fifth 500*l.*, 500*l.*, and 420*l.* In the case of these figures no account, it should be added, has been taken of temporary abatements. They

<sup>14</sup> In 1892.

suggest, and indeed compel, the conclusion that the fall of rental has continued, while the rate of decrease has become less rapid. It hardly seems in fact an exaggeration to pronounce that between 1883 and 1903 the Colleges of Oxford as a whole sustained a loss of between a third and a quarter of their agricultural revenues.

If indeed the revenues of the Colleges derived from other sources besides agricultural rental had not materially increased during this period, they must have discovered that their means of meeting their necessary expenditure were more seriously crippled than they have been in actual fact. It may therefore be of some interest to give to the present examination a wider scope than that contemplated in the previous paper of 1895, and we may present and investigate further items of external receipts. A corresponding extension of our inquiry to the whole of the external expenditure will naturally follow; and from the external we shall pass to the internal revenue and outgoings of the Colleges. Their capital accounts should also receive brief attention, and in conclusion the separate financial record of the University will be summarily reviewed. We shall thus bring under observation, rapid though our inspection must necessarily be, the greater portion of the material furnished in these published accounts; and we shall realise, with tolerable completeness, the general extent of their connection with the vicissitudes of English agriculture.

#### VIII.—THE EXTERNAL RECEIPTS OF THE COLLEGES.

Of the External Receipts the Receipts from Lands and from Tithe have already been examined in some detail. Yet attention should be here directed to an important consideration emphasised in the previous paper. It is impossible from a mere investigation of the bare figures, as they are given in the published accounts, to ascertain how far the Receipts from Lands and Tithe at different periods have been derived from identical or from altered sources. The total acreage of the land possessed by the different Colleges may have been diminished by sale, or increased by purchase; and the Capital (as distinct from the Revenue) Accounts, presented<sup>15</sup> in a subsequent portion of this paper for the two years 1893 and 1903, disclose the existence of such transactions, without affording any indication of the respective quantities in acreage represented in purchases or sales by the monetary equivalents entered in these accounts. Similarly, some of the Colleges may in the course of the last score or so of years have made fresh investments in Tithe,

<sup>15</sup> Cf. Table XI.

while others may have received payments for its redemption; and these payments, causing a diminution in the annual receipts from this particular source of income, may have swelled those arising from some other quarter to which the investment of the redemption money has been directed, such as the dividends or interest accruing from stocks or shares. These transactions are continually occurring. Perhaps indeed in the total mass of the figures for all the Colleges taken together, it may without risk of serious error be assumed that changes in one direction have neutralised those in another. Yet the Receipts from Dividends and Interest for the three years 1883, 1893, and 1903 indicate a steady increase. In 1883 they amounted to 19,502*l.*, in 1893 to 20,322*l.*, and in 1903 to 23,429*l.* Under this heading in Table VII, in the case of some Colleges,

TABLE VII.—*The External Receipts of the Colleges, 1883, 1893, and 1903 (omitting Shillings and Pence).*

	1883.	1893.	1903.
	£	£	£
I. Estates—			
Lands let at Rack Rent* .....	158,528	152,227	154,083
"    on Beneficial Lease.....	12,483	2,259	1,123
Houses let at Rack Rent.....	20,978	33,715	50,104
"    " on Beneficial Lease ....	2,436	1,774	1,368
"    and sites let on long Lease	12,299	21,388	39,866
Fines and Fine Loans .....	11,887	1,858	467
Copyholds for Lives .....	712	483	249
"    of Inheritance .....	774	685	553
Leaseholds held by Colleges .....	378	197	258
Tithe Rent Charge .....	49,426	41,851	37,558
Quit Rents, Rent Charges, &c. ....	3,134	2,319	2,616
Timber and Underwood .....	4,400	4,083	4,928
Minerals.....	297	568	760
Other Properties .....	2,794	775	789
II. Dividends and interest † .....	19,502	20,322	23,429
Total‡ .....	300,028	284,454	318,151

\* As in Table II, remissions of rent shown under the item "Other Expenditure" in the accounts of some of the Colleges have been deducted. In the previous paper (Table VIII) these deductions were not made. The figures of that previous table have been checked for the purposes of this paper, and some corrections made.

† These totals include some items which seem to belong more strictly to internal than external revenue. (*Cf.* Table VIII below, from which they are excluded.)

‡ These totals do not correspond with those in Table A above, because in that table the deductions mentioned under \* were not made.

certain sums are reckoned which seem to belong more properly to internal than to external revenue. These sums are excluded from the corrected figures given in the following table:—



TABLE VIII.—*Dividends and Interest Received by the Colleges and the University, 1883, 1893, and 1903 (omitting Shillings and Pence).*

	1883.	1893.	1903.
	£	£	£
University .....	660	531	826
Balliol.....	368*	273	337*
Merton .....	1,981	4,063	4,042
Exeter.....	210	529*	639*
Oriel .....	328	68	31
Queen's .....	450	933	1,560
New.....	1,117	572	1,361
Lincoln .....	795	629	181
All Souls .....	3,978*	3,497	1,970
Magdalen .....	1,722	1,426	1,245
Brasenose .....	2,518	2,092	2,606
Corpus .....	1,061	2,092	3,031
Christ Church .....	361	103	1,511
Trinity .....	42	195	83
St. John's .....	622*	1,136*	1,188*
Jesus .....	397	317	640
Wadham .....	71*	180*	432*
Pembroke .....	733	657	643
Worcester .....	108*	88*	205*
Total .....	17,522	19,381	22,531
The University .....	262	472	414
Total .....	17,784	19,853	22,945

\* From the figures given in the published accounts for these Colleges sums are excluded which seem to belong to internal rather than external revenue.

These figures, it should be added, are also affected by some further influences besides those already noticed. When Colleges sell land, or houses, the original intention of the legislation, by which their action is controlled, was that the proceeds of the sale should be reinvested eventually in the same class of property, that consisting of land or houses; but the completion of this purpose may be indefinitely delayed, and during the intervening period the money is invested temporarily in Government or other first-class stock. It is not, therefore, merely former Receipts from Tithe which may thus be permanently transformed into later Dividends or Interest, but previous Receipts from Lands may also undergo a temporary or prolonged metamorphosis into the same description of income. Nor is even this a complete statement of the causes which may occasion fluctuations in the amount of the Dividends and Interest received by the Colleges; for they have been allowed to raise money for the improvement of their property, or for compensation for the loss of fines due to the termination of their Beneficial Leases, by selling portions of the stock belonging to them, and making

provision for its replacement in periodical instalments. This easy expeditious mode of borrowing is now generally adopted in preference to other methods, and, although the contraction of fresh fine-loans has become a rare occurrence, the present charges for the payment of the interest, and the replacement of the capital, of such loans amount to a sum not very much smaller than the charges for estate-improvement loans, and the two added together form no inconsiderable figure.<sup>16</sup> The replacement of stock sold for such purposes is continually occurring, while fresh loans, at any rate for improvements, are no less continually requiring the fresh sale of stock.

#### IX.—THE RECEIPTS FROM HOUSES AND BUILDING SITES.

The large increase which is apparent in the Total Receipts from Houses, and Sites of Houses, both in the aggregate sum for the Colleges as a whole (and the University), and in the several figures furnished in special instances among them, is probably, to some extent, the consequence of fresh investments made in this particular variety of property. But it also seems to show that the Colleges, in common with the other owners of house property, have participated in the increased income usually arising from this source, at any rate in urban centres. For the Colleges as a whole the Total Receipts from Houses much more than doubled between 1883 and 1903, while in the shorter period between 1893 and 1903 they increased from 56,877*l.* to 91,388*l.* In this case again the termination of the Beneficial Leases was responsible for part of the increase. The Receipts from Houses let on Beneficial Lease were in the three years 1883, 1893, and 1903 respectively 2,436*l.*, 1,774*l.*, and 1,368*l.*, and only seven Colleges drew any revenue from this source in 1903, while in 1883 as many as thirteen were still interested in this form of tenure. The greater portion of the change seems indeed to have been completed by 1893. But nevertheless the increase in the Receipts from Houses let at Rack Rent was larger in absolute amount in the later of the two periods, and a similar variation was shown in the Receipts from Houses and Sites of Houses let on Long Lease. The figures of the former description of revenue for the three years 1883, 1893, and 1903 respectively were 20,978*l.*, 33,715*l.*, and 50,104*l.*, and for the latter they were 12,299*l.*, 21,388*l.*, and 39,866*l.* This last item of revenue has more than trebled since 1883; it has almost doubled since 1893. In the case of one College the amount entered under this head in 1883 was inconsiderable; but the large sum given in 1893 was

TABLE IX.—*Receipts from Houses, 1883, 1893, and 1903 (omitting Shillings and Pence).*

	Houses at Rack Rent.			Houses on Beneficial Lease.			Houses and Sites of Houses on Long Lease.			Total.		
	1883.	1893.	1903.	1883.	1893.	1903.	1883.	1893.	1903.	1883.	1893.	1903.
University .....	£	£	£	£	£	£	£	£	£	£	£	£
Balliol .....	1,565	1,274	2,813	152	176	68	179	60	560	1,896	1,510	3,441
Merton .....	374	684	770	5	—	—	914	1,320	1,883	1,293	2,004	2,653
Exeter .....	786	2,868	6,098	106	65	1	592	786	1,149	1,484	3,719	7,248
Oriel .....	27	8	7	—	—	—	115	112	107	142	120	114
Queen's .....	879	1,196	1,739	—	31	—	580	635	635	1,459	1,862	2,374
New .....	269	600	1,709	326	340	343	267	857	3,955	862	1,797	6,007
Lincoln .....	735	964	1,356	22	9	—	664	2,599	4,745	1,421	3,572	6,101
All Souls .....	830	1,051	1,885	154	111	205	32	32	542	1,016	1,194	2,682
Magdalen .....	—	—	—	—	—	—	16	2,085	7,970	16	2,085	7,970
Brasenose .....	7,022	12,190	15,630	982	515	267	836	3,339	6,177	8,840	16,044	22,074
Corpus .....	1,389	3,080	4,478	41	11	—	530	113	65	1,980	3,204	4,543
Christ Church .....	336	353	340	—	—	—	—	—	—	336	353	340
Trinity .....	2,042	1,681	3,684	19	14	—	690	613	806	2,751	2,308	4,490
St. John's .....	488	704	784	—	—	—	510	510	510	998	1,214	1,294
Jesus .....	1,515	2,881	3,938	533	489	481	4,459	6,530	8,092	6,507	9,910	12,511
Wadham .....	1,968	2,411	3,035	2	—	—	1,915	1,797	2,670	3,885	4,208	5,705
Pembroke .....	272	880	883	89	—	—	—	—	—	361	880	883
Worcester .....	12	328	366	—	—	—	—	—	—	12	328	366
Total .....	20,978	33,715	50,104	2,436	1,774	1,368	12,299	21,388	39,866	35,713	56,877	91,338
The University .....	239	650	1,159	32	25	3	751	1,000	1,151	1,022	1,675	2,813
Total .....	21,217	34,365	51,263	2,468	1,799	1,371	13,050	22,388	41,017	36,735	58,552	93,651

between that year and 1903 almost quadrupled. In the case of another College the Receipts from Houses let at Rack Rent were similarly almost quadrupled between 1883 and 1893; but in 1903 they had become little less than eight times as great as they were in 1883. A pronounced augmentation in the Receipts from Houses is certainly a prominent feature of the published accounts.

Yet it should not be forgotten that even in the latest year (1903) for which the accounts are published, the Receipts from Houses are only 91,338*l.*, while the Receipts from Lands are 155,206*l.*; and the increase in the former variety of revenue in 1903 over 1893 amounts to 34,461*l.*, and over 1883 to 55,625*l.*, while the fall in the Receipts from Lands between 1883 and 1903 was 15,805*l.*, and in the Receipts from Tithe 27,673*l.*, thus making a total diminution of 43,478*l.* The decrease in the Receipts from Lands and Tithe together between 1893 and 1903 was, it is true, only 3,573*l.*, but between 1883 and 1893 it was 24,100*l.*, while the increase in the Receipts from Houses was 21,164*l.* During this earlier period then from 1883 to 1893 the increase in the Receipts from Houses was outweighed in the balance by the diminution in the Receipts from Lands and Tithe; but during the later subsequent period from 1893 to 1903, when the Receipts from Houses increased by 34,461*l.*, the scales inclined decisively in the other direction; and the same general circumstance, only less emphatically illustrated, characterised the entire period from 1883 to 1903 treated as a whole. There can be little or no doubt that the increase in the Receipts from Houses, which, as we have seen, was especially large during the later period, while the fall in the Receipts from Lands was more pronounced in the earlier period, is mainly responsible for the growth in the total external receipts of the Colleges for 1903 contrasted both with 1893 and 1883.

The Receipts from Fines and Fine Loans, as we have noticed before, have greatly diminished, and are now an inconsiderable sum. In 1883 they were 11,887*l.*, in 1893 1,858*l.* and in 1903 467*l.* The Receipts from Copyholds have become not much more than half the amount which they totalled in 1883, when they reached the figure of 1,486*l.* They have fallen from 1,118*l.* in 1893 to 802*l.* in 1903; and this form of tenure also is disappearing. The Receipts from Leaseholds held by the Colleges do not call for comment, for they represent an amount which is comparatively trifling. Quit Rents and other Rent Charges have diminished when compared with 1883, but increased in contrast with 1893. The Receipts from Timber and Minerals have risen above, and those from Other Properties have fallen below, the sums entered for 1883. The

former necessarily fluctuate from year to year, and the figures in the table show perhaps greater regularity than might have been anticipated. The diminution in the latter is probably due to additional exactitude of classification, and the figures for 1893 and 1903 are almost identical. But it is the Receipts from Lands, Houses, and Tithe which represent the bulk of the external revenue of the Colleges. In the total of 318,151*l.* for 1903 they accounted for 284,102*l.*; of a total of 300,028*l.* for 1883 they represented 256,150*l.*; to a total of 284,454*l.* in 1893 they furnished a quota of 253,214*l.* The proportion supplied by the other varieties of revenue has diminished, and, with the exception of the Dividends and Interest, they amount, taken singly, to considerable fractions of the whole sum of the Receipts. The revenue derived from their houses, their tithe, and their landed property is that which concerns the Colleges most closely, and here the conspicuous feature of their financial history since the commencement of the publication of the accounts has been, if we treat them as one whole, an increase in the Receipts from Houses, balancing, or, more than balancing, a diminution in those from Lands and Tithe.

#### X.—THE EXTERNAL EXPENDITURE OF THE COLLEGES.

When we pass to the consideration of the External Payments of the Colleges, as they are presented in Table X, our attention is immediately directed to a significant circumstance, which was also noticed in the previous paper of 1895. We can hardly fail to be impressed by the magnitude of the deductions which must be made from the Gross Receipts of landed and house property before their net return in class income can be ascertained. The four headings (1) Rates, Taxes, and Insurance, (2) Agency and Management, (3) Law Charges, and (4) Repairs and Improvements, comprise expenditure necessarily incident to the ownership of Lands and Houses. The magnitude of the expenditure on three of the four is, no doubt, to some extent amenable to careful management; although inopportune economy may easily conduct to subsequent extravagance. The amount, however, of rates and taxes depends on other circumstances besides those which the tax-payers or rate-payers themselves determine.

Of the four items, that for Agency and Management has increased from 8,500*l.* in 1883 and 8,866*l.* in 1893, to 9,581*l.* in 1903. This increase is probably due in part to the replacement of beneficial leases by rack-rent tenancies, which would necessitate a larger recognition of the responsibilities of ownership, and a more prominent performance of the active work of management. At

TABLE X.—*External Expenditure, 1883, 1893, 1903 (omitting Shillings and Pence).*

	1883.	1893.	1903.
	£	£	£
Charges in respect of Estate Loans {	13,982	18,371	18,753
"    Fine Loans {	4,935*	1,819*	850*
"    " {	16,344	15,009	14,423
"    " {	2,739†		
Lessees' Annuities .....	3,898	1,451	126
Quit Rents .....	247	212	242
Miscellaneous Rents and Rent Charges	2,452	8,056	11,059
Rates, Taxes, and Insurance .....	15,190	16,473	24,932
Agency and Management .....	8,500	8,866	9,581
Law Charges .....	1,961	1,194	798
Repairs and Improvements .....	26,279	34,975	42,383
Payments to Vicars and Aug- mentations .....	8,931	6,861	5,649
Donations to Churches and Schools...	6,237	4,221	3,917
Other Expenditure .....	3,658‡	3,506‡	4,500‡
Total .....	115,373	121,014	137,213
Net Revenue thus calculated .....	184,655	163,440	180,938
Gross External Revenue as per Table VII .....	300,028	284,454	318,151

\* These sums are included under a separate heading, "Investments," in the published accounts, but were made on behalf of the "liquidation of loans."

† This sum is classified under "Investments" in the published accounts, but is there described as "paid for liquidation of Fine Loans."

‡ From these figures are excluded the sums shown under this heading for "remissions of rents" in the published accounts. They have been deducted from the Receipts from Lands in Table IX. In the previous paper (Table VIII) they were included in "Other Expenditure." A sum of 240*l.* in the accounts of one College for 1883 is reckoned as "Internal Expenditure," but might be placed here (with 165*l.* in 1893 and 1,109*l.* in 1903), as it is described as being "for Real Estates Maintenance Fund." In "Other Expenditure" in 1883, a sum of 624*l.*, and part of a sum of 243*l.*, might be classified as "Agency," 61*l.* as "Law Charges," 278*l.* as "Repairs," and 2,102*l.* as "Donations."

In "Other Expenditure" in 1893, 46*l.* might be classified as "Miscellaneous Rents and Rent Charges," 42*l.* and part of 766*l.* as "Agency," 109*l.* as "Repairs," and 1,735*l.* as "Donations."

In "Other Expenditure," in 1903, 41*l.* might be classified as "Agency," 1,608*l.* as "Repairs," and 2,209*l.* as "Donations."

the time of the Duke of Cleveland's Commission, thirty or so years ago, when the Beneficial Lease was still very common, the Commissioners remarked, as a fact deserving of attention, that the cost of management, as shown by the figures supplied to them, was noticeably small, and represented but a low percentage<sup>17</sup> of the

<sup>17</sup> Some 2*l.* 17*s.* 7*d.* per 100*l.*

receipts. But the figure given for 1871 was 8,801*l.*, and in 1883 it was less than this amount. In 1893 it was only slightly higher, and in 1903 it was 9,581*l.* The Receipts from Lands and Houses amounted in this year to 246,544*l.*, and therefore the percentage for Agency and Management, calculated with reference to these receipts alone, was under four. Calculated with reference to the total external receipts, which were 318,151*l.*, it was under three per cent. For 1871 the total external income of the Colleges was reckoned to be a less considerable sum; for it was estimated as being in annual value 309,759*l.* It should, however, be noticed that neither in 1871, nor at the later dates, would the figure for Agency and Management include the stipend of the College Bursar or Treasurer, who might, or might not, also be a Fellow, and be partly paid for his services by the emoluments of a Fellowship. His stipend, indeed, apart from such emoluments, would be placed in these accounts among the payments to College Officers, which form a heading of Internal Expenditure. Law Charges, unlike Agency and Management, have decreased. They were 1,961*l.* in 1883, 1,194*l.* in 1893, and 798*l.* in 1903. In the figures furnished to the Commissioners for 1871 they do not appear as a separate item, and may not improbably have been then included in the sums returned as spent on Management.

But it is the remaining two of the four headings which exhibit the most conspicuous increase. The growth in Rates, Taxes, and Insurance has been especially prominent during the later period from 1893 to 1903. The figure for 1893 (16,473*l.*) by comparison does not differ greatly from that for 1883 (15,190*l.*); for in 1903 the amount had become almost half as large again as it had been in 1893. It was 24,932*l.*, or nearly eight per cent. of the Total External Receipts. In 1871 the figure returned was only 9,669*l.* A comparison of the rates of the Income Tax in the years 1882, 1892, and 1902 will furnish no small portion of a complete explanation of the change in the expenditure on Rates, Taxes and Insurance, for the tax would be paid mainly at the beginning of the succeeding year, and affect the figures of the accounts published for that year rather than those of the year in which the rate was settled. In 1882 the Income Tax was 6½*d.* in the £, in 1892 it was 6*d.*, but in 1902 it was 1*s.* 3*d.* This influential factor therefore cannot be ignored, and the remaining portion of the increase is due more probably to the growth of such local rates as fall on landlords than to any considerable addition to the payment for insurance.

The increase in the expenditure on Repairs and Improvements is even greater than that shown by the figures given in the respective years for Rates, Taxes, and Insurance. But the period in which the

larger addition to the expenditure occurred is different, and the growth in the two periods is not very dissimilar. The sum of 26,279*l.* for 1883, had grown to 34,975*l.* in 1893, and by 1903 had become 42,383*l.* This last sum amounted to between a seventh and an eighth of the Total External Receipts, and to about a sixth of the Receipts from Lands and Houses alone. The latter comparison is the more legitimate, because the other chief items of External Receipts (such as Tithe and Dividends) do not entail expenditure for Repairs, although they are responsible for some proportion of the Law Charges, of the payments for Agency and Management, and of the Rates, Taxes, and Insurance. In 1871 the expenditure on Repairs and Improvements was returned as being 23,556*l.* Taking the four items together, in 1883 they represented an outlay of 51,930*l.*, in 1893 of 61,508*l.*, and in 1903 of 77,694*l.* This last sum was almost a quarter of the Total External Receipts, and was far more than half the Total External Expenditure.

But these four items do not comprise all the deductions which are incident to the enjoyment of the external revenue of the Colleges, and especially to their possession of lands and houses and tithe. For, while payments made to Vicars and Augmentations, which diminished from 8,951*l.* in 1883, and 6,861*l.* in 1893, to 5,649*l.* in 1903, and Donations to Churches and Schools, which decreased from 6,237*l.* in 1883, and 4,221*l.* in 1893, to 3,917*l.* in 1903, are to some extent voluntary in character, even if they are generally expected from conscientious and, still more commonly, from generous public-spirited landlords, and, while Lessees' Annuities, which have fallen from 3,898*l.* in 1883, and 1,451*l.* in 1893 to 126*l.* in 1903, represent a charge which is evidently disappearing, Quit Rents, which have remained stationary in amount, and were 242*l.* in 1903, and Rent Charges, which have grown from 2,452*l.* in 1883 to 8,056*l.* in 1893 and 11,059*l.* in 1903, are payments which cannot be avoided.

No less inevitable, so far at least as those who have succeeded to the obligations of the original borrowers of the money are concerned, are the charges for Loans, incurred both for the improvement of the estates and for compensation for the loss of fines. The apparent burden of the former of these two descriptions of loans, according merely to the figures placed directly under this particular heading in the published accounts, increased considerably between 1883 and 1893. But certain sums have been included under other headings which evidently have formed a portion of the interest paid or the capital replaced in connection with such Loans. The transfer of these sums to their appropriate category would make the figures for the charges for Estate Loans 18,917*l.* in



1883, 20,190*l.* in 1893, and 19,603*l.* in 1903. The charges for the Fine Loans would, similarly treated, be in 1883 19,083*l.*, in 1893 15,009*l.*, and in 1903 14,423*l.* The latter charges have sensibly diminished; and, adding the charges for both descriptions of Loans together, the figures appear as 38,000*l.* for 1883, 35,199*l.* for 1893, and 34,026*l.* for 1903. Thus an appreciable decrease is evident; but even in 1903 the charges for Loans amounted to not much less than a ninth of the total external receipts, and to about a seventh of the receipts from lands and houses alone. They represented not much less than a quarter of the total external expenditure. In fact, excluding the payments to Vicars and the Donations to Churches and Schools, we find that the remaining External Payments absorbed considerably more than a third of the External Receipts. So great is the difference between gross and net income where property consisting of Lands, Houses (and Tithe) is concerned.

#### XI.—THE AMOUNT OF DEBT.

At this point it may be convenient to examine briefly the indebtedness, present and past, of the Colleges. The annual charges for interest and repayment show, as we have seen, a sensible decrease. But the recent decrease in the principal of the debt is more considerable. In 1883 it seems to have been about 813,000*l.*,<sup>18</sup> and in 1893 it had grown to about 825,000*l.*, but in 1903 it was about 646,000*l.* Including the indebtedness of the University, the figures of the three years respectively would be about 865,000*l.*, 865,000*l.*, and 691,000*l.* The later period between 1893 and 1903 has accordingly been coincident with a diminution in the indebtedness of the Colleges and the University of some 174,000*l.*, or certainly more than a fifth of the original amount. Five Colleges were in 1903 entirely free from debt. Three of these were similarly unencumbered in 1883 and 1893. One College, on the other hand, which in 1883 had no indebtedness, was differently situated in this respect both in 1893 and 1903. In the case of eight Colleges the figures for 1893 showed a diminution compared with those for 1883, and the same feature characterise the figures of seven of the eight for 1903 contrasted with 1893. One of the seven reduced its indebtedness by nearly seven-eighths in the whole period between 1883 and 1903, another College repaid two-thirds of its former obligations, a third College accomplished a reduction

<sup>18</sup> The figures in the case of one College are not given for 1883, and the amount of the debt for that year has to be computed on the basis of the figures published (for the first time) for 1889. A more stringent calculation accounts for the difference between the figure given in the text and that in a footnote to the previous paper.

little less considerable, two others almost succeeded in halving the original amounts of their indebtedness, a sixth College repaid more than a third, while a seventh extinguished its entire debt. Between 1893 and 1903 three Colleges alone increased their indebtedness, and, of the total indebtedness of the Colleges as a whole, two Colleges were in 1903 responsible for more than half, and in both instances considerable reductions were effected during the period from 1893 to 1903. The indebtedness of the Colleges as a whole amounted in 1903 to some 171,000*l.* more than their gross receipts (both external and internal) for that year. It was more than double their gross external receipts, and more than three times their net external receipts. In the case of five Colleges alone was their debt in 1903 in excess of their gross receipts. In the case of three Colleges it was covered by their net external receipts, in the case of three more it did not amount to more than twice this figure, in the case of three others thrice their net external receipts was needed to discharge their total indebtedness, four times this figure would be sufficient for the purpose in the case of one other, and five times in that of two more, leaving only two Colleges where a larger sum would be required. In one of these instances the debt amounted to some six, in the other to some ten times, their net external receipts.

For 1871, however, it may be noticed that the interest on loans and the repayment of principal were returned as amounting to 19,617*l.*, or very little more than the charges for Estate Loans alone in 1903; and, in addition to what may be distinguished as the "funded debt" of the Colleges, some account should perhaps in strictness be taken of the "floating debt" shown by adverse balances, in order to reach the total figure of indebtedness. Such adverse balances may, no doubt, be due to passing circumstance, and admit in many cases of special explanation, which would serve to modify any inference which might be drawn. It is not easy to determine their precise significance; and the figure for 1903 is accordingly given here only for what it may be worth. On their Revenue Accounts a net floating indebtedness of 1,085*l.* would appear to rest upon the Colleges.<sup>19</sup> Proceeding similarly with the Capital Accounts, a net floating indebtedness of 6,516*l.* would be established. Adding this figure to that reached above, the total net floating indebtedness of the Colleges would seem to be in 1903 7,601*l.*, and the inclusion of the University would raise the amount to 13,508*l.* But, it may be added, if the Colleges (and the University) be regarded as one unit, this sum would be amply<sup>20</sup>

<sup>19</sup> In three cases the Colleges were identical with those showing adverse balances on their Capital Accounts.

<sup>20</sup> More than twice or thrice.

covered by the favourable balances of those Colleges which exhibited adverse balances neither on their Revenue nor on their Capital Accounts; and in any event the floating indebtedness would not amount, for the Colleges alone, to an eighty-fourth of their funded debt.

## XII.—CAPITAL ACCOUNTS.

It is, however, desirable to take into brief consideration those Capital Accounts to which reference has just been made, as distinct from the Revenue Accounts, if we would ascertain the total outlay of the Colleges upon Repairs and Improvements. The annual burden of such capital expenditure is, it is true, shown in the Revenue Accounts, under the heading of Charges for Estate Loans; but the additional figures contained in the Capital Accounts are not unimportant, and deserve brief consideration. These Capital Accounts<sup>21</sup> have however been taken out here for two years only, those of 1893 and 1903. They are summarised in the totals given in Table XI. The expenditure on Repairs, it will be noted, is distributed under four headings. The last two refer to Internal Repairs on the College Fabric, or Otherwise, and the first two comprise External Expenditure, whether on Farm Buildings or on Other Improvements. In 1893 the expenditure on farm buildings amounted to 8,149*l.*, and in 1903 to 8,395*l.* In the former year the sum expended on other external repairs was 6,085*l.*, in the latter it was 28,755*l.* The other items of receipts and payments do not call for much notice, with the exception of the sums spent on Internal Repairs and Improvements. The total expenditure on Internal Repairs was not very different in total amount in the two years examined; but the sum was differently distributed. The increased expenditure on the College Fabric is noticeable, and, as we shall see later, is probably connected with the figures given in subsequent tables of the numbers of members of the respective Colleges at the different dates, and of some of the items of their Internal Receipts and Expenditure. Investments, it may be observed, accounted for about half as much again in 1903 as they did in 1893. The receipts from Dues Compositions exhibited no very remarkable variation between the earlier and the later year, the receipts from the Sale of Stock increased, the receipts from Other Sources were augmented more largely, and the addition to

<sup>21</sup> The vexed question of the proper basis of distinction between Capital and Revenue (with regard both to receipts and to expenditure) may of course affect the bookkeeping of the Colleges as of other bodies, and should be borne in mind when these Capital Accounts are investigated.

the receipts from Loans was the most considerable of all. They were more than four times as great in 1903 as they were in 1893. This increase is, it would seem, connected with the increased expenditure on other External Repairs and Improvements, and on the College Fabric.

TABLE XI.—*Receipts and Expenditure of the Colleges on Capital Account, 1893 and 1903 (omitting Shillings and Pence).*

	1893.	1903.		1893.	1903.
RECEIPTS.	£	£	PAYMENTS.	£	£
Dues Compositions...	816	667	A. External—		
Loans .....	10,574	45,981	From Buildings ...	8,149	8,395
Sale of Stock .....	24,315	29,864	Other .....	6,085	28,755
Other sources.....	46,505	59,202	B. Internal—		
			College Fabric ....	4,134	10,202
			Other .....	8,047	2,364
			Investments .....	60,615	93,952
Total .....	82,210	135,714	Total .....	87,030	143,668

*Note.*—For the detailed figures of these Capital Accounts for the several Colleges, Tables XXI and XXII in the Appendix should be consulted. It will be seen there how the figures may be accidentally affected by circumstances peculiar to one year or one College.

### XIII.—THE INTERNAL RECEIPTS AND EXPENDITURE OF THE COLLEGES.

TABLE XII.—*Internal Receipts of the Colleges, 1883, 1893, and 1903 (omitting Shillings and Pence).*

	1883.	1893.	1903.
	£	£	£
Admission Fees .....	2,544	2,700	2,757
Degree Fees .....	2,793	2,787	2,991
College Dues and Establishment } Charges .....	36,532	37,887	40,546
Tuition Fees .....	40,005	41,911	47,801
Room Rents .....	18,553	21,808	23,655
Profits on Buttery, Kitchen, &c.....	4,347	3,691	4,198
Other sources.....	3,046	2,850	3,114
Total .....	107,820	113,634	125,062

TABLE XIII.—*Internal Expenditure of the Colleges, 1883, 1893, and 1903*  
(omitting Shillings and Pence).

	1883.	1893.	1903.
	£	£	£
Charges in respect of Building Loans	7,950	8,704	7,147
Rates, Taxes, and Insurance of } Buildings .....	6,988	7,157	13,049
Maintenance and Repair of Buildings	15,310	9,239	13,823
Chapel Services and Choir .....	7,438	7,523	7,861
Library .....	3,510	3,242	3,538
College Servants .....	22,903	23,232	25,096
Table Allowances .....	2,602	2,470	2,830
College Entertainments .....	1,834	2,264	2,159
Maintenance of Establishment .....	12,666	10,802	13,033
The Head of the College.....	22,811	20,905	20,418
Fellows .....	70,980	59,715	56,894
Scholars .....	87,438	39,693	39,202
College Officers .....	12,057	11,493	11,870
The Tuition Fund.....	47,228	46,651	53,536
„ Pension Fund and Pensions ....	2,835	3,064	4,295
„ Building Fund .....	1,762	1,222	792
„ Exhibition „ .....	7,388	8,685	10,931
Other Expenditure .....	20,825*	19,524*	19,683*
<b>Total .....</b>	<b>304,525</b>	<b>285,585</b>	<b>306,157</b>

\* These figures include sums of 15,202*l.*, 14,987*l.*, and 14,551*l.*, being grants (of which no details are furnished) to the Chapter Fund at one College; sums of 774*l.*, 78*l.*, and 465*l.*, being interest on temporary loans at another College; a sum in 1893 of 578*l.* spent on the installation of the electric light at a third College; and a sum in 1903 of 1,109*l.*, being a Grant to the Estates Maintenance Fund at a fourth College.

TABLE XIV.—*Number of Members of the Colleges, &c., 1883, 1893, and 1903.*

[From the "University Calendar."]

	Undergraduates.			Members of Convocation.			Members on the Books.		
	1883.	1893.	1903.	1883.	1893.	1903.	1883.	1893.	1903.
University .....	111	120	200	269	299	302	498	566	703
Balliol .....	262	237	244	340	406	435	723	832	862
Merton .....	146	140	129	211	255	264	431	513	532
Exeter .....	164	152	165	460	523	525	756	825	876
Oriel .....	105	99	136	218	233	245	375	402	470
Queen's.....	130	119	188	267	295	273	*512	*539	*527
New .....	195	248	290	193	309	372	534	*784	*968
Lincoln .....	71	89	98	180	179	187	311	363	373
All Souls .....	5	7	4	97	91	89	111	111	121
Magdalen .....	116	178	186	213	274	339	*443	*649	*795
Brasenose .....	119	126	130	328	336	315	553	568	556
Corpus .....	68	85	100	168	212	238	287	348	391
Christ Church .....	231	297	298	710	751	732	*1,203	*1,350	*1,375
Trinity .....	118	172	192	263	300	349	467	608	718
St. John's .....	113	118	151	299	332	326	541	*598	*649
Jesus .....	68	95	134	111	112	150	232	298	392
Wadham .....	62	89	103	210	234	225	303	415	410
Pembroke .....	89	76	97	180	180	182	318	306	322
Worcester.....	106	95	92	209	242	245	393	426	405
Total .....	2,279	2,542	2,887	4,926	5,563	5,793	8,991	10,503	11,445
Hertford .....	98	76	121	141	175	144	294	312	376
Kemble .....	149	206	230	85	178	235	401	611	795
Non-Collegiate } Students .....	308	246	207	34	92	111	401	473	443
Halls .....	135	89	36	106	77	35	284	217	99
Private Halls .....	44	38	57	8	2	5	56	49	90
Total .....	3,013	3,197	3,538	5,300	6,087	6,323	10,427	12,165	13,248

\* Excluding members of choir (unmatriculated).

Matriculations:—1883, 784; 1893, 813; 1903, 868.

Bachelors of Arts:—1883, 577; 1893, 583; 1903, 621.

Masters of Arts:—1883, 325; 1893, 366; 1903, 370.

The figures in the table refer to the numbers at the beginning of the academical year, *e.g.* (October, 1882-83), and the published accounts to the calendar year (1st January—31st December, 1883). The average for the two years (1883-84) in the calendar for the 19 Colleges would be 2,324 undergraduates, instead of 2,279, and in the later years 2,556 and 2,900, instead of 2,542 and 2,887.

The figures of the Internal Receipts and Expenditure of the Colleges have been taken out in Tables XII and XIII for the three years 1883, 1893, and 1903; and for a reason, which will be immediately evident, a further table has been placed in close juxtaposition, showing the membership of the Colleges in the same

three years. Table XII establishes an increase in the total receipts of 5,814*l.* between 1883 and 1893, and of 11,428*l.* between 1893 and 1903. The absolute increase, accordingly, during the later of the two periods was very nearly twice the figure reached in the earlier. The increase during the whole interval between 1883 and 1903 was 17,242*l.*, or some sixteen per cent.

Of the different headings under which the Internal Receipts are classified in the published accounts, the Profits in the Buttery and Kitchen, and the Receipts from Other Sources, hardly call for great attention, and will certainly not reward any prolonged study. The variations in the Receipts from Other Sources are not noticeably large, and some fluctuation must necessarily occur in such an item when the figures for single years are compared with one another. It may be partly due to differences in the classification adopted by different Colleges at different dates. For the description "Other Sources" is elastic, although with the lapse of time we might expect that greater precision would be obtained by distributing such expenditure under the different headings and removing it from this comprehensive group. A comparison of the Profits in the Buttery and Kitchen earned by different Colleges is similarly affected by the pertinent consideration that one College may calculate its Profits by including certain income, or deducting certain expenditure, which are differently treated by another College. The figures for Maintenance of Establishment (or indeed those for Maintenance and Repairs of Buildings, or for College Servants) in the Internal Expenditure of the Colleges may be correspondingly increased or diminished by similar variations of bookkeeping. For one College may, and another may not, charge a smaller or a greater part of its expenditure on these objects against its Receipts from the Kitchen, Buttery, &c., before the Profits entered in the accounts are reckoned, and, as they stand, the published figures do not afford the means for ascertaining and removing the effect of such variations in the methods of keeping the books. The figures however given under the heading of Profits in Kitchen, Buttery, &c., for the three years show a decrease of 656*l.* in 1893 compared with 1883, and an increase of 507*l.* in 1903 compared with 1893. Such changes in opposite directions may be taken for what they may be worth.

The five remaining items are more instructive. The receipts from Admission Fees have grown from 2,544*l.* in 1883 to 2,757*l.* in 1903, and the receipts from Degree Fees, which were 2,793*l.* in 1883, were 2,991*l.* in 1903. In the one case an increase of some eight per cent., in the other of some seven per cent., occurred. College Dues and Establishment Charges show an addition of 4,014*l.* between 1883 and 1903, representing a percentage increase

of some eleven per cent. Tuition Fees, which were 40,005*l.* in 1883, were 47,801*l.* in 1903, and Room Rents, which were 18,553*l.* in 1883, were 23,655*l.* in 1903. In the case of two of the five items<sup>22</sup> the increase was considerably greater between 1893 and 1903 than it was between 1883 and 1893. In that of the Tuition Fees the total increase between 1883 and 1903 was not much less than twenty per cent. The cause of these additions is, no doubt, largely to be sought in the extension of the College Buildings and in the increase in the numbers of their members. The number of undergraduates on the books of those Colleges to which the figures of the tables in this paper refer was in 1883 2,279, in 1893 it was 2,542, and in 1903 it was 2,887. Thus between 1883 and 1903 it increased by 608, or some twenty-seven per cent.<sup>23</sup> These figures are supplied in Table XIV, and the two Tables XII and XIV are accordingly related to one another.

But, when we investigate more closely these relations, we are confronted by various possibilities. The increase during a defined period in the number of undergraduates living within the College walls, who would probably contribute more largely than those dwelling in lodgings outside to Establishment Charges (and possibly also to Tuition Fees),<sup>24</sup> might be greater than the total addition to the number of those in residence made during the same interval of time. For Colleges might extend their buildings, and yet not contemplate, at any rate immediately, an increase in the undergraduates upon their books, which would correspond exactly, or even nearly, with the addition to the rooms at their disposal. The increase might assume for the time at least a new direction. The distribution of their men in residence might be altered. A larger proportion of their members might be housed in College; and a smaller quota than before might now be living in licensed lodgings outside the College walls.<sup>25</sup> Such a change would certainly tend to cause results of which some indications are perhaps apparent in the published figures. It would make the advance in the receipts from Admission and Degree Fees less considerable than that in Establishment Charges, Room Rents, and Tuition Fees. The sums quoted for the years 1883 and 1903 seem to support this

<sup>22</sup> *I.e.*, the College Dues and the Tuition Fees. The Degree Fees diminished slightly between 1883 and 1893.

<sup>23</sup> Calculated on a comparison of the average of the two academical years (October, 1882-83 and 1883-84) 1883 and 1884, and the two 1903 and 1904, the increase would be lowered to twenty-five per cent.

<sup>24</sup> Which might be reduced in some instances in a fourth year of residence.

<sup>25</sup> The figures for the undergraduates in Table XIV would include a certain number of men who were not in residence; but the proportion would not in any case be large, and would not be likely to vary much from year to year.



contention ; for during that interval the Admission and Degree Fees increased by percentages of eight and seven, while College Dues and Establishment Charges grew by eleven per cent. In the same interval advances of twenty per cent. in Tuition Fees, and twenty-eight per cent. in Room Rents, were effected. And we shall see later,<sup>26</sup> when we examine the Receipts of the University, that the Lodgings Fees paid for the inspection of Licensed Lodgings remained unaltered when 1903 is compared with 1883.

On the other hand, the increase in the total number of undergraduates was larger in the later than it had been in the earlier of the two periods, and such a difference in the rate of progress is in general correspondence with the financial record of some at least of the Receipts. It is a feature which appears in connection with College Dues and Establishment Charges and with Tuition Fees. Room Rents, on the contrary, showed a greater increase in the earlier period. This difference might suggest a new conclusion ; for it might be the case that the more considerable portion of the extension of the buildings was accomplished between 1883 and 1903, and that, if the Colleges at that time pursued a policy which would result in no such large addition to their number of undergraduates as would correspond to the increase in the number of their rooms, they permitted or encouraged during the later period from 1893 to 1903 an augmentation in their undergraduate membership which exceeded that which had occurred before. It may be added that it should be borne in mind that in the case of some among the Colleges the increase in the rooms at their disposal for the accommodation of undergraduates resulted from an incorporation of the Halls, which formerly maintained a separate existence, and was not a consequence of the erection of new buildings. The number of undergraduate members of the Halls, according to the figures of Table XIV, fell from 135 in 1883 to 89 in 1893. It fell again to 36 in 1903. This diminution would not improbably be accompanied, or followed, by a corresponding increase in the undergraduate membership of those Colleges with which the Halls were merged. It may be noticed that the fall was greater in the later than it had been in the earlier period. The fact, indeed, that from a comparison of the final with the commencing year of the whole interval elapsing between 1883 and 1893 the percentage of increase in the Room Rents is shown to have been larger than that in Tuition Fees, seems so far to support the supposition that in that time the proportion borne by the number of undergraduates living within the College walls to the total

number of undergraduate members was appreciably increased. The percentage, however, of increase in the Room Rents between 1883 and 1903 does not diverge widely from the percentage of increase in the number of undergraduates, although it was slightly higher. For the one was twenty-eight and the other was twenty-seven.<sup>27</sup>

Another possibility must not be overlooked. An alteration may have been effected in the charges made to individual undergraduates. Such changes, it is probable, are uncommon; although, as we shall see,<sup>28</sup> they have exercised an influence upon the receipts of the University. In that instance however the alteration which was made was evidently an increase in the charges; in the case of the Colleges a contrary inference is suggested by the published figures. They point to diminution rather than addition. The growth in the Tuition Fees indeed between 1883 and 1903 was more considerable than that in any of the items we have been examining except the Room Rents. But for the disproportionate increase in these receipts we have found a sufficient reason which is certainly independent of any material enhancement of the charges. An extraordinary increase in the Tuition Fees, were it established, might, it is true, find an explanation in a greater variety of studies pursued at the later period; for special fees might be required for novel subjects which had formed no part of a previous curriculum. This possibility is not, however, confirmed by the apparent evidence of the published figures. They, on the contrary, show that the percentage of increase in the Tuition Fees was not so large for the whole period between 1893 and 1903 as the percentage of increase in the number of undergraduates. Tuition Fees grew between 1883 and 1903 by twenty per cent., but the number of undergraduates increased by twenty-seven.<sup>29</sup> This increase, as we saw, did not diverge widely from the advance in the Room Rents, which was twenty-eight per cent., although it was somewhat lower.

If we regard the two periods separately, we find that during the later period (from 1893 to 1903) the percentages of increase for the Tuition Fees and for the number of undergraduates were almost identical. The one was some fourteen, and the other some thirteen per cent.<sup>30</sup> The percentage of increase of the Room Rents, on the other hand, fell during this particular period to nine per cent. In the earlier period (from 1883 to 1893) the percentage of increase in

<sup>27</sup> If averages of two academical years be taken, the percentage of increase in the undergraduates is reduced to twenty-five.

<sup>28</sup> Cf. Table XVIII.

<sup>29</sup> Or twenty-five, if averages of two academical years be contrasted.

<sup>30</sup> This percentage is not affected by substituting averages drawn from two academical years.

the number of undergraduates was represented by a figure which occupied a position about intermediate between the percentage of increase for the Tuition Fees and that for the Room Rents; but it was not in direct correspondence with either of the two. Tuition Fees increased by five, the number of undergraduates by eleven,<sup>31</sup> and Room Rents by eighteen per cent. These variations and divergencies are interesting. It would be hazardous to draw any definite conclusion, but the figures do not at any rate conflict seriously with certain suppositions. These are, firstly, that in the earlier period, when the accommodation provided in the College buildings was more conspicuously enlarged, the increase in the number of undergraduates living in College rooms was greater than that in the total number of undergraduate members; secondly, that in the later period, when extensions of the buildings were becoming less common and considerable, further additions were nevertheless made to the total number of undergraduates, which finally prevented any considerable divergence for the whole period examined between the increase of the undergraduates and the increased accommodation found within the Colleges, although the latter slightly exceeded the former; and, lastly, that the charges made for Tuition Fees to individual undergraduates, whatever change they underwent at any time, tended generally in the direction not of increase but of reduction.

In 1883 the Tuition Fees represented 40,005*l.* in a total of 107,820*l.* Internal Receipts; in 1893 they furnished 41,911*l.* to a total of 113,634*l.*, and in 1903 they accounted for 47,801*l.* in a total of 125,062*l.* The proportion was considerable; but it hardly varied. It was some thirty-eight per cent. A division of the Tuition Fees by the number of undergraduates<sup>32</sup> at each of the three dates discloses a small decrease between 1883 and 1893, and a smaller increase between 1893 and 1903. The amount per head at the earliest date was between 17*l.* and 18*l.*; at the two later dates it varied between 16*l.* and 17*l.* A similar division of the Room Rents by the number of undergraduates at the different periods is affected by the disturbing factor that no means are furnished for distinguishing the occupants of rooms in College, who alone would pay these Room Rents, from residents in lodgings. But, if we take the figures as they stand, the division indicates a slight increase between the successive dates, and a more pronounced advance during the earlier period of the two. The figure varies between

<sup>31</sup> This would become ten on a comparison of the averages drawn from two academical years.

<sup>32</sup> Undergraduates who had ceased to reside would probably pay no Tuition fees, but their number would be small.

8*l.*<sup>33</sup> and 9*l.* Room Rents in 1903, we may add, accounted for somewhat less than a fifth of the Total Internal Receipts, while in 1883 they represented somewhat more than a sixth.

The proportion furnished by the Degree Fees is far less considerable. In 1903 they yielded 2,991*l.* to a total of 125,062*l.* In 1883 they furnished 2,793*l.* to a total of 107,820*l.* The divergence between the percentage of their increase between 1883 and 1903 and that in the number of undergraduates is conspicuous; for they have only grown by seven per cent., contrasted with a growth of twenty-seven in the total number of the undergraduates. Yet the percentage of increase of the College Dues and Establishment Charges, which was eleven, is even less compatible with the supposition of an advance in the charges made to individual members. For an addition to the number of undergraduates, we might expect, would be at once reflected in an augmentation of College Dues and Establishment Charges, but possibly it might not even finally, and certainly it would not immediately, produce the consequence of a corresponding addition to Degree Fees. For the new undergraduates might never proceed to the higher degree of Master of Arts, and some interval of time would separate their entrance into College life from their attainment of the lower grade of Bachelor. The fact that these Degree Fees fell (though only slightly) between 1883 and 1893, and that the increase which occurred took place in the later of the two periods, so far supports the supposition of a postponement of the necessary or probable addition which might be expected. No such explanation, however, is forthcoming for the similarly small percentage of increase in the Admission Fees, the advance in which, unlike the augmentation in the number of undergraduates, and the growth of Tuition Fees and College Dues and Establishment Charges, was effected mainly during the earlier of the two periods examined in this paper. The hypothesis of some diminution in the charges made to individuals is, in this case at any rate, manifestly suggested by the published figures. Divided by the number of undergraduates, on the supposition that a third of their total may have come into residence for the first time in that year, and accordingly have paid these Admission Fees, the figure for 1903 yields a quotient of under 3*l.* a head.

College Dues and Establishment Charges accounted for somewhat less than a third of the Total Internal Receipts in 1903. In 1893 they furnished almost exactly that proportion, but in 1883 the quota which they supplied was somewhat higher. When the total

<sup>33</sup> On a calculation of an average drawn from two academical years, this figure would be altered to 7*l.*

Receipts from this source are divided by the number of undergraduates at the three different dates, the amount per head appears to have fallen from some 16*l.*<sup>34</sup> in 1883 to some 14*l.* in 1893 and 1903. But College Dues at any rate, unlike Establishment Charges in the main, are paid by graduates as well as undergraduates; and for that reason a division of the total sum may be misleading in this instance. The larger proportion, however, of the growth which happened between 1883 and 1903 in this important item of the Internal Receipts was accomplished in the later period; and the percentage of increase rose from four between 1883 and 1893 to seven between 1893 and 1903. Yet this difference in the rate of growth would seem, unless further explanation or additional commentary could be obtained, to conflict with the contention supported by the figures of the Room Rents. That contention, it may be remembered, was that the enlargement of the College Buildings was effected mainly between 1883 and 1893. Yet Establishment Charges, at any rate, would probably be paid on a higher scale by residents in College rooms than by those living outside in lodgings; and certainly a change, such as that suggested previously, in the proportions in the total number of undergraduates of those occupying rooms in College, and of those inhabiting licensed lodgings, might be expected to result in more than a proportionate increase of a sum comprising College Dues and Establishment Charges when that was compared with the increase in the total number of undergraduates.

It is noticeable, however, that the increase in College Dues and Establishment Charges between 1883 and 1893 attained a much lower percentage than the increase in the total number of undergraduates. It was only four, while the percentage of the increase of the undergraduates was eleven,<sup>35</sup> and the increase in the Room Rents reached a percentage of eighteen. It closely corresponded, on the other hand, with the increase of the Tuition Fees, which was five per cent. In the later period also the percentage of the increase in College Dues and Establishment Charges, which reached a figure considerably higher than before, was still far below the percentage of the increase in the number of the undergraduates. It was seven, while the percentage of the increase of the undergraduates was thirteen. During this later period, indeed, the percentages of increase of the College Dues and Establishment Charges and of the Room Rents approximated to one another (being respectively

<sup>34</sup> By substituting averages drawn from two academical years for a single calendar year, the figure at the beginning would be 15*l.*, in the middle 14*l.*, and at the end of the whole period 13*l.*

<sup>35</sup> Or ten, on a comparison of averages drawn from two academical years.

seven and nine), while the percentages of increase of the number of undergraduates and of the Tuition Fees displayed the same characteristic (being respectively thirteen and fourteen). The general evidence of the published figures, especially during the earlier period, seems accordingly to point in the direction of some decrease in the charges made for College Dues and for Establishment to individuals, although the variations in the later period can perhaps be reconciled with the supposition, noted previously, of a further addition to the total number of undergraduates exceeding, or at any rate finally equalling, the increase in the rooms. Yet a growth in the number of undergraduates residing out of College would naturally produce a less considerable advance in the Establishment Charges than that occasioned by an increase of the residents in College rooms. Those living in lodgings would probably pay these Charges on a lower scale.

The published figures, however, do not allow of a separation between the Establishment Charges and the College Dues; and, as a consequence, a wider opportunity is open for more or less probable conjecture which it is impossible to bring to a decisive test. Nor should it be forgotten that College dues are also paid by graduates who would contribute little to charges for Establishment; for they are, for the most part, non-resident. It is indeed an interesting circumstance that the number of members of Convocation increased more rapidly during the earlier of the two periods considered in this paper, while the number of undergraduates, as we have seen, received the larger addition in the later period. The growth in the number of members of Convocation was also more unevenly distributed. The figures for 1883 were 4,926, for 1893 5,563, and for 1903 5,793. Thus the increase in 1893 on 1883 was 637, but the increase in 1903 on 1893 was only 230.<sup>36</sup> The total number of members on the books of the Colleges at the same three dates was 8,991, 10,503, and 11,445. If we compare 1903 with 1883, the number of members of Convocation had grown by 867, and the total number of members on the books by 2,454. The percentage increases were thus some seventeen or eighteen, and some twenty-seven per cent., contrasted with twenty-seven for the undergraduates alone.<sup>37</sup> This enduring increase in what may perhaps be called the total *clientèle* of the Colleges might have been expected to be greater; for it would seem to be the product

<sup>36</sup> The corresponding additions to undergraduates were 263 and 345.

<sup>37</sup> The percentage increases for the separate periods were: (1) between 1883 and 1893 (a) undergraduates 11, (b) members of Convocation 13, (c) total numbers on books 17; (2) between 1893 and 1903, (a) undergraduates 13, (b) members of Convocation 4, (c) total numbers on books 9.

of cumulative addition. Its effects should undoubtedly appear in the figures for that portion of the third item of the Internal Receipts which belongs to College Dues, and less markedly perhaps in those of the Degree Fees; but the wastage caused by removal from the College books seems to have been considerable.

If we examine the numbers of the undergraduates alone as given in Table XIV, we find that between 1883 and 1893 seven of the nineteen Colleges exhibited a decrease, and the remaining twelve showed an increase. Between 1893 and 1903 only three Colleges exhibited a decrease. In one of these instances the number of undergraduates was at all times a "negligible quantity," and in the case of the other two the diminution amounted to eleven and three respectively. During the whole period between 1883 and 1903 four Colleges, of which three were identical with the three just considered, showed a diminution in the number of their undergraduates. On the other hand, one College more than doubled, and two others fell not far short of doubling, the number of their undergraduate members in the same interval of time; while four other Colleges increased their number by about a half, and four more by about a third. The inferences which may be drawn from these figures may be broadly supported, but are not precisely verified, by the numbers given at the foot of Table XIV of those matriculating and of those taking the degrees of Bachelor and of Master of Arts in the three years. For, as the accounts of the University which we shall subsequently examine show, the withdrawal of would-be officers, and volunteers, from their University studies for service in South Africa during the war with the Boers left behind traces which were tolerably distinct, and the figures relating to the Degrees for the latest of the three years were probably affected to some extent by this abnormal circumstance. The number of those matriculating was in 1883 784, in 1893 813, and in 1903 868, and the increase between 1883 and 1903 was accordingly between ten and eleven per cent. In the later period it was some seven, in the earlier some four or five per cent. The number of those taking the degree of Bachelor of Arts was 577 in 1883, 583 in 1893, and 621 in 1903; and the greater growth occurred in the later period, while the increase between 1883 and 1903 was between seven and eight per cent. In the case of the Masters of Arts the growth occurred mainly in the earlier period. The number of those taking the degree of Master of Arts was 325 in 1883, 366 in 1893, and 370 in 1903, and the increase between 1883 and 1903 was, like that of the matriculations, between ten and eleven per cent.

Among the items of Internal Expenditure the payments made

to the Heads, the Fellows, the Scholars, and the Exhibition Fund have already been considered. Their proportion of the Total Internal Expenditure has somewhat diminished. In 1903 they amounted to 116,514<sup>l.</sup><sup>38</sup> in a total of 306,157<sup>l.</sup> The increase in Rates and Taxes and Insurance from 6,988<sup>l.</sup> in 1883 and 7,157<sup>l.</sup> in 1893 to 13,049<sup>l.</sup> in 1903, is, undoubtedly, largely due to the same cause as that which we saw was responsible for a considerable proportion of the higher figure entered in 1903 under the similar heading of the External Expenditure in Table X. That was the rise of the Income Tax from 6<sup>d.</sup> or 6½<sup>d.</sup> in the £ to 1s. 3<sup>d.</sup> But it is also probably due in some degree to the augmented burden of the local rates,<sup>39</sup> which has been a prominent, and almost universal, characteristic of recent municipal administration in this country. Rates, Taxes, and Insurance absorbed in 1903 more than a tenth of the Total Internal Receipts of the Colleges. The charges for Building Loans, by contrast, which increased from 7,950<sup>l.</sup> in 1883, to 8,704<sup>l.</sup> in 1893, fell to 7,147<sup>l.</sup> in 1903; and these successive changes may receive their explanation from the circumstance that in the earlier period the Colleges were engaged in the actual extension of their buildings on a larger scale, while in the later they were reducing the annual burden of the interest by the repayment of the principal of the loans raised for that extension. On the other hand, we see that the expenditure on the maintenance and repair of the College Buildings, which fell from 15,310<sup>l.</sup> in 1883 to 9,239<sup>l.</sup> in 1893, rose again to 13,823<sup>l.</sup> in 1903. This later increase may possibly have been due in part to the enhanced cost of materials and of labour, or the low figure for 1893 ought perhaps to some extent to be attributed to accidental influences peculiar to the single year selected. Similar in direction, but less considerable in magnitude, have been the fluctuations in the expenditure upon the Maintenance of the Establishment. This amounted in 1883 to 12,666<sup>l.</sup>, in 1893 to 10,802<sup>l.</sup>, and in 1903 to 13,033<sup>l.</sup> But the payments to College Servants, on the other hand, have persistently increased. In 1883 they were 22,903<sup>l.</sup>, in 1893 23,232<sup>l.</sup>, and in 1903 25,096<sup>l.</sup>

Taking the four headings of (1) Rates, Taxes, and Insurance of Buildings, (2) Maintenance and Repair of Buildings, (3) College

<sup>38</sup> This figure differs from that shown before, because the payments to Professor Fellows are not included. The payments to the Fellows were between a fifth and a sixth, and to the Scholars between a seventh and an eighth, of the Total Internal Expenditure in 1903; in 1883 the proportions were respectively between a fourth and a fifth and an eighth and a ninth.

<sup>39</sup> Some increase in the assessment of the College Buildings has been made, but on the other hand the rates are comparatively low in Oxford.



Servants, and (4) Maintenance of Establishment together, we find that in 1903 they amounted to 65,001*l.* They thus represented more than a fifth of the whole Internal Expenditure, and absorbed more than a half of the Total Internal Receipts. In 1883 the Total Internal Expenditure amounted to 304,525*l.*, and the Total Internal Receipts to 107,820*l.*, while these four items amounted to 57,867*l.* In 1893 the figures for the Internal Expenditure, the Internal Receipts, and the same four items added together, were 285,585*l.*, 113,634*l.*, and 50,430*l.* respectively. Thus in 1883 somewhat less than a fifth, and in 1893 considerably less than this proportion, but more than a sixth of the internal expenditure, were represented by these four items, and in the earlier year more than one half, and in the later less than one half, of the Internal Receipts were required to meet them. In the first year indeed of the whole series, that of 1883, the Internal Receipts would not have sufficed by themselves to defray more than about a third of the Internal Expenditure, in the intermediate year, 1893, the two totals were as eleven to twenty-eight, and in the final year, 1903, they were as two to five. If in 1903 the figures under the two headings of the Charges incurred in respect of Building Loans and the payment made to the Building Fund were added to the four items distinguished previously, a total sum would be reached of 72,940*l.*, which was not much less than a quarter of the whole Internal Expenditure.

The payment to College Servants alone, which was 25,096*l.*, amounted to about a twelfth of the Internal Expenditure, and to about a fifth of the Internal Receipts. But, to reach the total expenditure upon service, it is probable that some portion of the sums included under Maintenance of Establishment should be added in the case of some of the Colleges, and it is certain that part of the amounts placed under Pensions and the Pension Fund should be thus reckoned. As we noticed before, some Colleges also, in arriving at their Profit in the Kitchen, Buttery, &c., may deduct some wages, which other Colleges place under the heading of College Servants. In 1883 and in 1893 alike, however, it is curious to note that the expenditure on College Servants absorbed a somewhat larger proportion of the Internal Receipts than it did in 1903; and yet, with the extensions of the College Buildings, the influence of which is apparently reflected, as we have seen, in the increase shown under certain headings of the Internal Receipts, an addition to the proportionate cost of service might have been expected. The same cause might with justification be regarded as responsible for some portion of the absolute increase in the remaining five of the six items distinguished, which represented in 1903, as we saw, not

much less than a quarter of the whole Internal Expenditure of the Colleges, and amounted to as large a sum as 72,940*l.*

To the augmented number of undergraduates, who could be housed in the extended buildings, may also be largely ascribed the increased payments to the Tuition Funds. These diminished from 47,228*l.* in 1883 to 46,651*l.* in 1893, but in 1903 were no less than 53,536*l.*, or 6,308*l.* more than in 1883. The increase for the whole period from 1883 to 1903 was somewhat less than the advance in the Tuition Fees among the Receipts, and the growth of the latter was not interrupted by a fall in 1893. In 1883 they amounted, it will be remembered, to 40,005*l.*, in 1893 to 41,911*l.*, and in 1903 to 47,801*l.* But in every one of the three years the figures for the expenditure on the Tuition Fund were thus higher than those for the receipts from Tuition Fees, and the increases in 1903 compared with 1883, shown on both sides of the account, are in broad general correspondence. The Tuition Fund is obviously fed from other sources besides Tuition Fees. It should also be remembered in this connection that the bulk of the expenditure upon the Pension Fund is designed to make provision for retiring Tutors, and not for superannuated servants. The figure entered under this last heading was half as large again in 1903 as it had been in 1883.

The fluctuations between the three years in the payments classified as Other Expenditure are, by comparison, so small as to call for little or no attention; nor are the variations in expenditure upon the Library, on Table Allowances, and on College Entertainments, in any way remarkable. The last two items have grown in magnitude between 1883 and 1903, but the increase is not very considerable, and the sums involved are small fractions of the whole expenditure. It is perhaps a curious accidental rather than significant circumstance, that the figure for Table Allowances in 1893 should be lower than in either 1883 or 1903, while that for College Entertainments should be larger in the intermediate year than it was in either of the other two. The expenditure on Chapel Services and Choir has grown from a total of 7,438*l.* in 1883, and 7,523*l.* in 1893 to 7,861 in 1903; while the payments to College Officers diminished from 12,057*l.* in 1883 to 11,493*l.* in 1893, and then rose, by a slight increase, to 11,870*l.* in 1903.

Finally, it may be observed that, if to the six items of expenditure distinguished previously we add the payments to the Tuition Fund alone, we reach a total figure which exceeds the sum of the Receipts by 1,400*l.*; and, if the payments to the Pension Fund as well be brought into account, the deficiency in the Receipts is raised to some 5,700*l.* From this calculation it is evident that, apart from the expenditure upon the Chapel

Services and Choir, and Library, and the payments for Table Allowances and for College Entertainments, the Internal Revenue of the Colleges would not suffice, without the additional assistance furnished by the External Receipts, to carry on the work of boarding and educational establishments. Nor must it be forgotten that in this calculation no allowance has been made for the important facts that a portion of the stipends of the Tutors are paid in the Fellowships attached to their official status, and appear under heading, not of the Tuition Fund, but of that of the payments to the Fellows, and that some, and perhaps the greater, part of the expenditure on College Officers may be connected with internal administration, and not with the management of the estates and other external property. A portion also of the payments to the Heads might be included in this category; and, although a large quota of the item described as Other Expenditure consists of the payments to the Chapter Fund at Christ Church (the details of which are not supplied in the accounts), some 3,000*l.* or 4,000*l.* can be distinguished as probably incurred in the conduct of the Colleges as educational and boarding institutions. It is therefore plain that their Corporate Revenues are, at any rate under existing circumstances, necessary to their present educational activity, and that a serious fall in their External Receipts would affect their ability to meet their Internal Expenditure of this description.

#### XIV.—OTHER RECEIPTS AND PAYMENTS.

The computation we have now supplied would stand in need of some correction, were we to attempt to trace in detail the application of the Receipts from Trusts and Special Funds belonging to and administered by the different Colleges. Those Receipts have not hitherto been noticed in this paper. In 1883 they amounted to 24,076*l.*, in 1893 to 26,488*l.*, and in 1903 to 30,351*l.* In the last year they were thus equivalent to not much less than a tenth of the Total External Receipts, and to about a fourth of the Total Internal Receipts. But, if we turn to the other side of the account, a further item of expenditure besides External and Internal Expenditure has been hitherto excluded for the most part from consideration. That is the item of Payments for University Purposes. In 1883 these amounted to 16,472*l.*, in 1893 to 20,574*l.*, in 1903 to 24,959*l.* A portion, at any rate, of the receipts from Trusts and Special Funds is applicable to the maintenance of Fellowships and Scholarships and Exhibitions, and to other purposes not immediately or necessarily connected with the working administration of the Colleges as boarding and educational establishments; and the portion available for such an object which

should be added to our previous figures may accordingly not be considerable. In any event it is perhaps legitimate to set the payments for University Purposes as an outgoing against the Receipts from Trusts and Special Funds as an incoming. From this comparison a surplus of some 5,300*l.* emerges; but this surplus is less than the deficiency of 5,700*l.* which resulted from our previous calculation. The substantial truth of the contention that the External Revenues of the Colleges are under existing circumstances required for their efficient conduct as boarding and educational establishments remains intact.

The payments for University Purposes were in 1903 about half as large again as they had been in 1883. They had increased during the interval between 1893 and 1903 by some twenty-one per cent. They are shown for 1903 in the following table, classified under four different headings, and a table is added to enable the receipts from Trusts and Special Funds to be compared with the total payments for University purposes for the three years 1883, 1893, and 1903. In the Appendix will be found a table (reproduced from the previous paper) of the details of the payments for University Purposes in 1883 and 1893.

TABLE XV.—*Contributions to University Purposes, 1903*  
(*omitting Shillings and Pence*).

	Professors.	Common University Fund.	Other Purposes.	Total.
	£	£	£	£
University .....	—	151	—	151
Balliol .....	—	161	—	161
Merton .....	1,836	231	563	2,630
Exeter .....	—	118	—	118
Oriel .....	411	—	—	411*
Queen's .....	442	176	—	618
New .....	2,100	239	—	2,339
Lincoln .....	266	—	—	266
All Souls .....	4,069	—	150	4,219
Magdalen .....	3,717	—	1,890	5,607
Brasenose .....	960	223	300	1,483
Corpus .....	1,178	181	—	1,359
Christ Church .....	2,043	1,057	362	3,462
Trinity .....	—	112	233	345
St. John's .....	426	389	—	765
Jesus .....	400	329	—	729
Wadham .....	100	84	—	184
Pembroke .....	—	68	—	68
Worcester .....	—	44	—	44
Total .....	17,948	3,513	3,498	24,959

\* Exclusive of the sum of 450*l.*, part of the income of a Canonry at Rochester annexed to the Oriel Professorship of the Interpretation of Holy Scripture, and directed by the University of Oxford Commissioners to be reckoned as a sum paid by the College for a specified University Purpose.

TABLE XVI.—*Receipts from Trusts and Special Funds, and Contributions to University Purposes, 1883, 1893, and 1903 (omitting Shillings and Pence).*

	Receipts from Trusts and Special Funds.			Contributions to University Purposes.		
	1883.	1893.	1903.	1883.	1893.	1903.
	£	£	£	£	£	£
University .....	1,476	2,109	1,965	—	147	151
Balliol .....	1,930	1,450	2,204	—	133	161
Merton .....	144	134	112	1,725	2,669	2,630
Exeter .....	822	1,308	1,506	—	115	118
Oriel .....	517	939	1,652	220*	310*	411*
Queen's .....	4,136†	4,090†	4,501†	270	454	618
New .....	958	1,024	1,354	799	1,424	2,339
Lincoln .....	1,639	1,720	2,403	—	—	266
All Souls .....	578	845	751	6,522	3,496	4,219
Magdalen .....	513	490	537	2,000	4,620	5,607
Brasenose .....	6	5	3	200	899	1,483
Corpus .....	495	380	495	1,950	1,738	1,359
Christ Church .....	4,066	3,792	3,989	1,702	2,940	3,462
Trinity .....	945	801	972	—	108	345
St. John's .....	1,899	2,081	1,955	547	557	765
Jesus .....	1,608	2,467	3,061	607	660	729
Wadham .....	1,065	1,492	1,526	200	192	184
Pembroke .....	1,191	1,361	1,305	—	67	68
Worcester .....	88	—	60	—	45	44
Total .....	24,076	26,488	30,351	16,742	20,574	24,959

\* See note to Table XV. (A sum of 450*l.* should be added, being part of a canonry at Rochester annexed to a Professorship.)

† A sum of 1,434*l.* appears among the payments in 1903 as expenditure upon Trusts, thus making the net receipts 3,067*l.*; similarly calculated, the net receipts in 1883 and 1893 would be 3,367*l.* and 3,190*l.*

In 1903 the total of 24,959*l.*, which appears from Table XV to have been the sum contributed by the different Colleges for University Purposes, was made up of 17,948*l.* paid to Professors (including Professor Fellows), 3,513*l.* paid to the Common University Fund, and 3,498*l.* paid for Other Purposes. In 1893 these three items were represented by 15,034*l.*, 4,334*l.*, and 899*l.*, and in 1883 by 12,840*l.*, 207*l.*, and nil. But in addition to the three headings given in the table for 1903 a fourth, described as University Purposes Fund, accounted in 1883 for 3,695*l.*, and in 1893 for 899*l.* A comparison of the table with that contained in the previous paper which was read in 1895, will show that the amount paid by the Colleges to Professors had in 1903 increased by 5,108*l.* since 1883, and by 2,914*l.* since 1893, and that the payment made to the Common University Fund had grown by 3,306*l.* since 1883, and

diminished by 821*l.* since 1893. The addition to the payments to Professors had been steadily maintained, until it amounted to not much less than a third of the payments to Fellows alone, and to considerably more than a fifth of the total payments to Fellows and Professors (including Professor Fellows). In 1883 the payments to Professors (including Professor Fellows) were between a sixth and a fifth of the payments to Fellows alone, and between a seventh and a sixth of those to Fellows and Professors (including Professor Fellows). In 1893 the proportions respectively were a little more than a fourth and a little more than a fifth. The total payments for University Purposes in 1903 amounted to between an eighteenth and a nineteenth part of the Total Expenditure of the Colleges on their Revenue Accounts, in 1883 to between a twenty-seventh and a twenty-eighth, and in 1893 to between a twentieth and a twenty-first. The proportion accordingly increased considerably during the whole period. In the case of one College the amount paid to Professors had in 1903 become nearly five times as large as it was in 1883, in another case it had nearly trebled, while in as many as four instances it had doubled or nearly doubled. The fall in the contribution to the Common University Fund which occurred between 1893 and 1903 was due apparently to a decrease in the case of one College alone; and a more than equivalent increase took place in this instance in the payment for Other Purposes. With this conspicuous exception, the contributions of the other Colleges generally to the Fund exhibited an increase between 1893 and 1903. The figures certainly show that the object contemplated by the last University Commission, of applying an increasing portion of the College revenues to University Purposes, has been realised on a considerable scale, although it can hardly be doubted that the serious curtailment of the prospective additions to the agricultural rental of the Colleges, to which our attention has been directed, has delayed and prevented the entire fulfilment of this aim.

In order to complete the examination of the Revenue Accounts of the Colleges two other headings must be briefly noticed. One of these is found among the Receipts, and consists of the Sale of Stock. This amounted in 1903 to 3,017*l.* The other is discovered in the Expenditure, and is described as Investments. The figure under this heading for 1883 was 13,914*l.*, for 1893 3,019*l.*, and for 1903 2,320*l.* In both cases it seems probable that the practice of placing such transactions in the Capital rather than the Revenue Accounts of the Colleges has become more usual with the lapse of time, and it should be noted that the sums entered under "Investments" include, in some instances, amounts acknowledged to be applied to

the liquidation of loans, and in others transfers (so described) to the Capital Accounts. We may, however (in Table XVII), bring all the items of Receipts and Expenditure on Revenue Account furnished in the annual publication together for the three years treated in this paper. It would then appear that the Receipts as a whole diminished between 1883 and 1893 from 436,002*l.* to 424,576*l.*, and increased between 1893 and 1903 to 476,581*l.*, bringing this last figure above the figure for 1883 to the extent of 40,579*l.*, and that the Expenditure fell from 442,880*l.* in 1883 to 428,373*l.* in 1893, and rose to 469,799*l.* in 1903, or 26,919*l.* above the figure for 1883.

The fall in the Receipts which occurred between 1883 and 1893 was due mainly to a diminution in the Receipts from Estates; and the Receipts from Dividends, from Internal Sources, and from Trusts and Special Funds, increased throughout the whole period, while the fact that the Receipts from Sales of Stock were *nil* in the intermediate year accounted for no more than a small part of the total variation. The Receipts from Estates were in 1903 30,590*l.* above the figure for 1893, and 14,196*l.* above that for 1883, while the Internal Receipts were in 1903 17,242*l.* above the sum given for 1883, and 11,428*l.* above that for 1893. In the case of the Expenditure the Internal Expenditure fell from 304,525*l.* in 1883 to 285,585*l.* in 1893, and then rose in 1903 to a figure exceeding that for 1893 by 20,572*l.*, namely, 306,157*l.*, while the External Expenditure increased during the whole period. In 1903 it was 17,168*l.* above the figure for 1893, and 28,664*l.* above that for 1883. The same feature, we have seen, characterised the expenditure for University Purposes. On the other hand, the expenditure on Investments fell largely between 1883 and 1893, and slightly between 1893 and 1903. The increase in the Total Receipts between 1883 and 1903 was due in a greater degree to the addition made to the Internal Receipts than to that effected in the Receipts from Estates, and the increase arising during the whole period from Dividends, Internal Sources, and Trusts and Special Funds added together was almost twice as much as that proceeding from Estates alone. The increase in the Total Expenditure, by contrast, was mainly caused by a growth in the External Expenditure. Both in 1883 and 1893 the Total Expenditure apparently exceeded the Total Receipts, but in 1893 the excess was larger than in 1883. In 1903, on the contrary, the Receipts exceeded the Expenditure. The table showing these results is here subjoined.

TABLE XVII.—*Receipts and Expenditure on Revenue Account, 1883, 1893, and 1903 (omitting Shillings and Pence).*

	1883.	1893.	1903.
<b>RECEIPTS.</b>			
	£	£	£
<b>A. External—</b>			
I. Estates .....	280,526	264,132	294,722
II. Dividends .....	19,502	20,322	23,429
<b>B. Internal .....</b>	107,820	113,634	125,062
<b>C. From Trust and Special }     Funds .....</b>	24,076	26,488	30,351
<b>D. From Sale of Stocks .....</b>	4,078	—	3,017
<b>Total .....</b>	436,002	424,576	476,581*
<b>PAYMENTS.</b>			
<b>A. External .....</b>	107,699	119,195	136,363
<b>B. Internal .....</b>	304,525	285,585	306,157
<b>C. For University Purposes</b>	16,742	20,574	24,959
<b>D. Investments ....</b>	13,914†	3,019†	2,320†
<b>Total .....</b>	442,880	428,373	469,799

\* In 1871 the Duke of Cleveland's Commission put the Corporate Income of the Colleges at 322,680*l.*, and the Income for Trust uses at 35,417*l.*, making a total of 358,097*l.* (or, deducting a sum of 27,194*l.* for moneys borrowed in 1871, but included in the figures of External Income, 330,903*l.*).

† In some cases these totals include sums for liquidation of loans which have been placed under charges for loans in previous tables; and in some cases they include transfers to capital accounts so described.



## XV.—THE ACCOUNTS OF THE UNIVERSITY.

TABLE XVIII.—*The University. Receipts, 1883, 1893, and 1903*  
(omitting Shillings and Pence).

	1883.	1893.	1903.
	£	£	£
<b>A. External—</b>			
<b>I. Estates—</b>			
Lands let at Rack Rent	8,842	6,971	6,867
Houses	239	650	1,159
" let on Beneficial	32	25	3
Lease			
Houses and sites let on	751	1,000	1,151
Long Leases			
Tithe Rent Charge	819	738	674
Quit Rents, &c.	9	29	65
Timber	7	13	—
Minerals	50	0	—
Other Properties	568	446	14
	11,317	9,872	9,933
<b>II. Dividends</b>	262	472	414
<b>III. Other Receipts—</b>			
Benefactions	2	2	2
University Press	5,000	5,000	5,000
Oxford Market	300	—	—
Wine Licences	263	—	—
Sundries	56	69	12
	5,821	5,071	5,014
<b>B. Internal*—</b>			
Matriculation Fees	1,946	2,020	2,949
University Dues	8,968	11,372	11,650
Examination Fees	5,891	5,629	6,544
Proctorial Fines	179	409	503
Degree Fees	9,045	9,498	10,380†
Incorporation and Ad-			
mission Fees	37	11	66
Registry	61	77	215
Lodgings	407	402	407
Sundries	7	45	184
	26,541	29,463	32,898
<b>C. From Trust Funds</b>	11,032	13,220	13,368
<b>D. " Colleges</b>	1,726	7,087‡	7,133§
<b>E. " Sale of Stock</b>	—	—	1,300
<b>Total</b>	56,499	65,185	70,060

\* Many alterations were made in the charges in 1903. These alterations would tend to increase slightly some of the figures for that year, *e.g.* the Matriculation Fees and the University Dues.

† In 1902 the Degree Fees were only 9,636*l.*, as compared with 10,482*l.* in 1901, and the Examination Fees were 6,216*l.*, as compared with 6,439*l.* in 1901. The lower figures for 1902 (and also, in the case of the Degree Fees, for 1903) contrasted with those for 1901 may have been occasioned by the withdrawal of members from the University to serve in South Africa. Since 1883 some new degrees have been established, which might tend to raise the total receipts.

‡ This figure includes a sum of 4,632*l.* for the Common University Fund, which is balanced by a sum of 4,369*l.* in the Expenditure.

§ This figure similarly includes a sum of 5,437*l.* for the Common University Fund, balanced by a sum of 5,446*l.* in the Expenditure.

A brief examination of the figures for the University published for the three years 1883, 1893, and 1903 may serve to make the review of the accounts attempted in this paper fairly complete. It will also, as we shall see, corroborate some of the main conclusions drawn from the figures given for the Colleges. The Receipts of the University grew from 56,499*l.* in 1883 to 70,060*l.* in 1903. In the intermediate year, 1893, they were 65,185*l.* But this total increase of somewhat less than a quarter of the original sum, with which the comparison started, was achieved in spite of a fall in the External Receipts from Estates from 11,317*l.* in 1883 to 9,933*l.* in 1903. The figure for the intermediate year, as in the case of many of the previous calculations furnished in this paper, was lower than that for the concluding year of the whole period. The Receipts from Estates in 1893 were only 9,872*l.* A fall of about one-eighth occurred between 1883 and 1903. The Total Net External Receipts, however, of the University alone differ from those of the Colleges alone in the circumstance that the fall throughout the period during which the accounts have been published appears, on a comparison of the three single years 1883, 1893, and 1903, to have been continuous. These Net External Receipts fell from 14,313*l.*<sup>40</sup> in 1883 to 11,582*l.* in 1893. They fell again to 10,887*l.* in 1903. The diminution was far greater in extent in the earlier of the two periods, but for the whole it amounted to little less than a quarter of the original sum. This diminution was partly due to a decrease in the Other External Receipts; for between 1883 and 1893 the University ceased to receive the two species of revenue comprised under the headings of the "Oxford Market" and of "Wine Licences," which amounted in 1883 to 563*l.* The Receipts from Dividends, on the other hand, were nearly doubled between 1883 and 1893, and, in spite of a slight diminution between 1893 and 1903, they amounted in the final year to 414*l.*, as contrasted with 262*l.* in the first year of the whole period.

The Receipts from Estates exhibit the same conspicuous features as those which we have seen characterise the financial record of the Colleges. A fall in the Receipts from Lands let at Rack Rent, and in the Receipts from Tithe, and an increase in the Receipts from Houses let at Rack Rent, and in the Receipts from Houses and sites of Houses let on Long Lease, are common to both descriptions of accounts. But, by contrast with the experience of the Colleges as a whole, the fall in the Receipts from Lands let at Rack Rent, like that in the Net External Receipts as a whole, was continuous

<sup>40</sup> These figures are taken from Table I, and differ slightly from the results obtained by a comparison of Tables XVIII and XIX, because in those tables the shillings and pence are omitted in the separate headings as well as in the totals.

when the three single years 1883, 1893, and 1903 were compared with one another. Intervening years may have been marked by fluctuations, sometimes upwards, and more often downwards, and in 1902 the receipts from this source amounted to little less than a thousand pounds more than the sum received in 1903. Nor apparently has the University been sensibly affected by the expiration of Beneficial Leases; for in 1883 none of its land was let on this tenure, and the revenue derived from Houses so let was but 32*l.* The Receipts from Houses let at Rack Rent were more than doubled between 1883 and 1893, and between 1893 and 1903 they increased from 650*l.* to 1,159*l.* The Receipts from Houses and sites of Houses let on Long Lease increased from 751*l.* in 1883, to 1,000*l.* in 1893 and 1,151*l.* in 1903. The Receipts from Tithe, on the other hand, fell from 819*l.* in 1883, to 738*l.* in 1893 and 674*l.* in 1903. Thus the Receipts from Lands and Tithe together fell from 9,661*l.* in 1883 to 7,709*l.* in 1893 and 7,541*l.* in 1903, while the Receipts from all descriptions of Houses rose from 1,022*l.* in 1883, to 1,675 in 1893 and 2,313*l.* in 1903. A diminution between 1883 and 1903 of 2,120*l.* in the two former items of revenue was to some extent counterbalanced by an addition of 1,291*l.* to the latter two, leaving a net decrease of 829*l.* Between 1883 and 1893 a comparison based upon similar data results in a net decrease of 1,299*l.*, and between 1893 and 1903 in a net increase of 470*l.* The fall between 1893 and 1903 in Other Properties, it may be noted, was considerable. It may have been due to some accidental circumstance specially affecting the single years contrasted.

The Internal Receipts show a material increase under most of the different headings; and the increase was no doubt mainly caused by the additions to the numbers of the members of the University, although the figures may probably also have been to some extent affected by changes in certain charges.<sup>41</sup> Contrasting the two years 1883 and 1903, we find that Matriculation Fees grew from 1,946*l.* to 2,949*l.*, University Dues from 8,968*l.* to 11,650*l.*, Examination Fees from 5,891*l.* to 6,544*l.*, and Degree Fees from 9,045*l.* to 10,380*l.* The total Receipts under these four headings increased from 25,850*l.* in 1883 to 31,523*l.* in 1903. In 1893 they amounted to 28,519*l.* The increase was thus distributed not unevenly between the two periods, and for the whole it represents a percentage advance of some twenty-two per cent. Proctorial Fines have been a more

<sup>41</sup> Between 1883 and 1893 some changes were made (mainly in an upward, but partly also in a downward direction) in the Examination Fees. In 1903 more extensive and general changes were introduced, and their partial operation would affect the figures for that financial year.

fluctuating source of revenue, Registry Fees, to which there is a large addition in 1903, testify to the origination of a new form of income rather than to the development of an old, and the stationary character of Lodgings Fees may be taken as some indication of the possibility, noticed previously, that the Colleges may have influenced the total figures of their undergraduate members more markedly by the provision of fresh accommodation in extended College Buildings than by allowing a greater number to reside outside the College walls in those Licensed Lodgings for the inspection of which these fees are paid. The Receipts of the University from Trust Funds increased by more than a fifth of the figure for 1883 between that year and 1903, and the Receipts from the Colleges became in the same interval more than four times as large as they had been. The higher figures for this last item represent to some extent the reverse side of that of which we saw the obverse when we noted the additional expenditure for University Purposes in the accounts of the Colleges alone.

Turning to the Expenditure of the University (as presented in Table XIX), a large proportion of the Receipts from the Colleges passes, we may notice, out of the account *en bloc* under the single final heading, which is described as Contributions to the Common University Fund. That fund is separately administered, but an annual statement of incomings and outgoings is included in the published accounts. Another item—that of Votes of Convocation for Special Purposes—did not exhibit much variation between 1883 and 1893, but in 1893 these votes accounted for no more than 80*g*l., as contrasted with 1,136*l.* and 1,086*l.* at the two earlier dates respectively. The payment of Interest on Sinking Funds on Loans, which forms the fourth division of the Internal Expenditure, was in 1903 less than it had been in 1893, but greater than in 1883. It amounted even in 1903 to a larger sum than the figure for the whole of the External Expenditure, but between 1893 and 1903 it diminished by more than twenty-one per cent. It represents the annual burden of capital outlay on the erection of new and on the extension and improvement of old University Buildings. In 1903 it amounted to about a seventh part of the Internal Receipts. In the third division of the Internal Expenditure the increase in Rates and Taxes is no less noticeable than it is, as we have seen, in the case of the Colleges alone. In 1883 the figure was 1,181*l.*, in 1893 it was 1,386*l.*, while in 1903 it had become 2,907*l.*, or more than twice as much as it had been in 1893. This single item absorbed more than an eleventh part of the Internal Receipts. The item of Law Expenses was abnormally swelled in 1903 by the payment of 700*l.* on account of an appeal, which was in the main

successful, against an increase in the assessment of University Buildings for local rates. The increase in the item of Printing and Stationery was considerable in the earlier period, and during the whole amounted to little less than fifty per cent. The payments to Institutions and Buildings, which form the second division of the Internal Expenditure, are set out in the published accounts in detail, while in Table XIX they are only given in the gross. They were 18,661*l.* in 1883, 19,928*l.* in 1893, and 22,634*l.* in 1903.

TABLE XIX.—*The University. Expenditure, 1883, 1893, and 1903 (omitting Shillings and Pence).*

	1883.	1893.	1903.
	£	£	£
<b>A. External—</b>			
Charges for Estate Loans ..	—	—	370
Quit Rents .....	3	2	2
Miscellaneous Rent Charges ..	373	874	969
Rates, Taxes, and Insurance ..	591	691	797
Agency and Management ..	359	206	230
Law Charges .....	111	140	38
Repairs and Improvements ..	825	1,442	1,711
Augmentations of Livings....	125	140	137
Donations to Schools, &c.....	166	151	94
Other expenditure.....	336	186	125
	2,889	3,882	4,478
<b>B. Internal—</b>			
<b>I. Stipends—</b>			
University Offices .....	4,645	4,879	5,184
Presentation to Degrees....	118	103	122
Professors and Readers....	10,779	12,400	10,877
Preachers .....	253	260	123
Examiners, &c. ....	4,161	4,872	5,311
	19,956	22,514	21,617
<b>II. Institutions and Buildings }</b>	18,661	19,928	22,634
<b>III. Other Expenditure—</b>			
Various Delegacies .....	1,166	2,082	2,527
Police .....	1,856	1,172	1,100
Law .....	692	171	707*
Pensions .....	346	289	707
Printing and Stationery....	1,440	1,945	2,141
Miscellaneous .....	386	755	628
Rates and Taxes .....	1,181	1,386	2,907
	7,067	7,800	10,717
<b>IV. Interest and Sinking Funds on Loans }</b>	4,416	5,882	4,631
<b>C. Vote of Convocation for Special Purposes }</b>	1,136	1,086	805
<b>D. Contributions to Common University Fund }</b>	—	4,369	5,446
<b>Total.....</b>	<b>54,125</b>	<b>65,411</b>	<b>70,323</b>

\* Including 700*l.* on account of the assessment appeal.

The payments included in the first division of the Internal Expenditure, under the general heading of Stipends, were 19,956*l.*,

22,514*l.*, and 21,617*l.* for the three years 1883, 1893, and 1903. The diminution between 1893 and 1903 occurred mainly in the figures of the payments to Professors and Readers. The amount thus paid in 1903 was 10,877*l.*, and this was only slightly above the sum (10,779*l.*) paid in 1883. In 1893 it was 12,400*l.*<sup>42</sup> The recent abolition of the afternoon University Sermon is, no doubt, it may be noticed, responsible for a decrease in the payments to Preachers from 260*l.* in 1893 to 123*l.* in 1903. The remaining items have grown and not diminished. University Officers received 4,645*l.* in 1883, 4,879*l.* in 1893, and 5,184*l.* in 1903, and Examiners, &c., received 4,161*l.* in 1883, 4,872*l.* in 1893, and 5,311*l.* in 1903. The Receipts from Examination Fees in the corresponding three years were 5,891*l.*, 5,629*l.*, and 6,544*l.*; but the payments to Examiners do not, of course, represent the whole expense of the Examinations, yet they may be regarded broadly as self-supporting. But, as in the case of the Colleges, it is plain, from a cursory inspection of the published accounts, that the Internal Receipts alone would not by a long degree suffice to meet the Internal Expenditure. In 1903 the latter amounted to 59,599*l.*, but the former were only 32,898*l.*, and even if the receipts from Trust Funds, which were 13,368*l.*, be added, a large balance remains to be provided from other sources. As an actual fact the accounts for 1903 show an excess of Total Expenditure over Total Receipts of 263*l.* In 1893 the apparent deficit was 225*l.*, while in 1883 a favourable balance of more than 2,000*l.* was exhibited.

Turning, in conclusion, to the External Expenditure, we find that Rates, Taxes, and Insurance grew from 591*l.* in 1883, to 691*l.* in 1893, and 797*l.* in 1903, and Repairs and Improvements increased from 825*l.*, to 1,442*l.* in 1893 and 1,711*l.* in 1903. Agency and Management, which were 359*l.* in 1883, were 230*l.* in 1903, and Law Charges, which were 111*l.* in 1883, were 38*l.* in 1903. In 1903 these four items, added together, amounted to 2,776*l.*, as contrasted with 1,886*l.* in 1883. In 1893 the total was 2,479*l.* Thus in 1883 a sixth of the Receipts from Estates, in 1893 about a fourth, and in 1903 some three-elevenths, were absorbed by these four items. If the expenditure on the charges for Estate Loans, and on Quit Rents and Miscellaneous Rent Charges, be added to the figure for 1903, it would appear that more than two-fifths of the Receipts were diverted before the net revenue arising from the Estates could become available. So great, we may once more remark, is the difference between the gross and the net income of landed and house property.

<sup>42</sup> This decrease should be compared with the increase in the payments to Professors by the Colleges shown in Tables XV and XXIII, and those payments were in 1903 5,108*l.* more than in 1883, and 2,914*l.* more than in 1893.

## APPENDIX.

TABLE XX.—*Gross and Net External Receipts\* for Three Years 1901-03 (omitting Shillings and Pence).*

	Gross Receipts.			Net Receipts.		
	1901.	1902.	1903.	1901.	1902.	1903.
	£	£	£	£	£	£
University .....	7,312	7,886	7,499	4,312	5,356	4,940
Balliol .....	6,199	6,130	6,218	4,990	4,298	4,760
Merton .....	27,811	27,783	28,052	9,327	12,495	14,694
Exeter .....	3,887	3,938	4,082	2,748	2,936	3,199
Oriel .....	10,320	10,231	10,511	4,235	3,855	4,897
Queen's .....	16,641	15,703	16,408	9,165	9,034	9,517
New .....	30,539	30,764	30,225	17,490	15,578	15,628
Lincoln .....	5,645	5,761	5,766	4,082	3,713	4,131
All Souls .....	25,851	25,355	25,947	14,038	14,206	14,534
Magdalen .....	54,884	58,380	57,180	26,809	28,107	26,791
Brasenose .....	14,736	15,245	15,740	9,481	10,570	10,321
Corpus .....	16,313	15,702	15,057	10,911	9,818	10,647
Christ Church .....	42,059	42,804	40,970	26,665	26,464	26,371
Trinity .....	6,084	6,176	6,289	3,807	3,759	3,965
St. John's .....	23,096	23,045	24,491	14,396	13,122	13,192
Jesus .....	11,465	11,041	13,156	7,084	7,012	7,341
Wadham .....	4,497	4,342	4,485	2,171	2,015	2,093
Pembroke .....	3,396	3,410	3,415	2,969	2,622	2,508
Worcester .....	3,764	3,671	3,886	2,132	2,150	2,283
<b>Total .....</b>	<b>314,499</b>	<b>317,367</b>	<b>319,377</b>	<b>176,812</b>	<b>177,110</b>	<b>181,812</b>
<b>The University .....</b>	<b>15,803</b>	<b>16,707</b>	<b>15,368</b>	<b>11,116</b>	<b>11,201</b>	<b>10,887</b>
<b>Total .....</b>	<b>330,302</b>	<b>334,074</b>	<b>334,743</b>	<b>187,928</b>	<b>188,311</b>	<b>192,699</b>

\* Average Gross Receipts (including University) 1901-03, 333,039*l.*" (without " ) '01-03, 317,081*l.*Average Net Receipts (including University) '01-03, 189,646*l.*" (without " ) '01-03, 178,578*l.*" (for the Colleges) 1891-93, 172,985*l.*" ( " ) '83-85, 187,747*l.*

TABLE XXI.—*Receipts of the Colleges on Capital Account (omitting Shillings and Pence), 1893 and 1903.*

	1893.				
	Dues Compositions.	Loans.	Sale of Stock.	Other Sources.	Total.
	£	£	£	£	£
University .....	36	—	—	52	88
Balliol.....	103	—	—	—	103
Merton .....	78	—	—	390	468
Exeter.....	101	—	—	251 <sup>a</sup>	352
Oriel .....	75	—	—	—	75
Queen's .....	21	1,525	—	358	1,904
New.....	83	—	390	158	631
Lincoln .....	9	—	1,010	—	1,019
All Souls.....	—	—	7,118	—	7,118
Magdalen .....	38	5,474	8,085	29,801 <sup>b</sup>	43,398
Brasenose .....	33	—	7,712	13,026 <sup>c</sup>	20,771
Corpus.....	30	400	—	—	430
Christ Church .....	—	—	—	890	890
Trinity .....	—	3,000	—	1,210 <sup>d</sup>	4,210
St. John's .....	48	—	—	—	48
Jesus .....	22	—	—	—	22
Wadham.....	49	—	—	369	418
Pembroke .....	24	—	—	—	24
Worcester .....	66	175	—	—	241
Total .....	816	10,574	24,315	46,505	82,210

	1903.				
	Dues Compositions.	Loans.	Sale of Stock.	Other Sources.	Total.
	£	£	£	£	£
University .....	25	5,39	—	88	5,702
Balliol.....	90	—	—	743	833
Merton .....	35	—	—	2,883 <sup>e</sup>	2,918
Exeter.....	—	—	—	770 <sup>a</sup>	770
Oriel .....	90	—	—	87 <sup>a</sup>	177
Queen's .....	21	2,285	194	848	3,348
New.....	124	8,450	—	630	9,204
Lincoln .....	24	2,010	2,585	—	5,519
All Souls.....	—	4,954	3,000	198	8,152
Magdalen .....	21	20,017	2,395	40,601 <sup>f</sup>	63,034
Brasenose .....	83	1,332	13,012	7,766 <sup>g</sup>	22,193
Corpus.....	—	—	—	160 <sup>h</sup>	160
Christ Church .....	—	—	—	3,056 <sup>i</sup>	3,056
Trinity .....	61	—	—	270 <sup>a</sup>	331
St. John's .....	17	—	4,483	47	4,547
Jesus .....	3	—	4,195	—	4,198
Wadham.....	47	394	—	—	441
Pembroke .....	12	—	—	1,105 <sup>j</sup>	1,117
Worcester .....	14	—	—	—	14
Total .....	667	45,981	29,864	59,202	135,714

<sup>a</sup> Being a transfer from Revenue Account.<sup>b</sup> Including 24,632<sup>l</sup> for sales of property.<sup>c</sup> Including 12,520<sup>l</sup> for sales of property.<sup>d</sup> Including 1,200<sup>l</sup>, a transfer from Revenue Account.<sup>e</sup> Including 1,687<sup>l</sup>, a transfer from Revenue Account, and 1,000<sup>l</sup> for Benefaction.<sup>f</sup> Including 16,023<sup>l</sup> for sale of property, and 16,590<sup>l</sup> for amount uninvested.<sup>g</sup> Including 7,740<sup>l</sup> for sale of property.<sup>h</sup> Including 135<sup>l</sup>, a transfer from Revenue Account.<sup>i</sup> Including 2,781<sup>l</sup> for Tithe Redemptions.<sup>j</sup> Including 1,101<sup>l</sup>, a transfer from Revenue Account.



TABLE XXII.—*Expenditure of the Colleges on Capital Account (omitting Shillings and Pence), 1893 and 1903.*

	1893.					
	External.		Internal.		Investments.	Total.
	Farm Buildings.	Other.	College Fabric.	Other.		
	£	£	£	£	£	£
University .....	—	—	—	20	—	20
Balliol .....	—	—	4,094	—	—	4,094
Merton .....	—	—	—	—	—	—
Exeter .....	—	—	—	13	—	13
Oriel .....	—	—	—	—	—	—
Queen's .....	961	—	—	28	—	989
New .....	727	74	—	—	2,875	3,676
Lincoln .....	118	—	—	—	—	118
All Souls .....	6,343	—	—	—	255	6,598
Magdalen .....	—	5,474	—	5,720	32,305	43,499
Brasenose .....	—	—	40	114	20,764	20,918
Corpus .....	—	—	—	2,152*	—	2,152
Christ Church .....	—	—	—	—	—	—
Trinity .....	—	—	—	—	4,321	4,321
St. John's .....	—	442	—	—	95	537
Jesus .....	—	—	—	—	—	—
Wadham .....	—	—	—	—	—	—
Pembroke .....	—	95	—	—	—	95
Worcester .....	—	—	—	—	—	—
Total .....	8,149	6,085	4,134	8,047	60,615	87,030

	1903.					
	External.		Internal.		Investments.	Total.
	Farm Buildings.	Other.	College Fabric.	Other.		
	£	£	£	£	£	£
University .....	484	2,055	1,500	36	1,600	5,675
Balliol .....	—	—	—	—	724	724
Merton .....	—	8,619	—	—	—	8,619
Exeter .....	—	—	—	—	7,018	7,018
Oriel .....	—	1,010	—	—	—	1,010
Queen's .....	—	810	900	691	195	2,596
New .....	2,066	—	7,000	—	662	9,728
Lincoln .....	—	—	—	450	6,923	7,373
All Souls .....	—	5,716	—	—	3,138	8,854
Magdalen .....	5,290	7,288	802	—	42,629†	56,009
Brasenose .....	—	—	—	—	23,266	23,266
Corpus .....	—	—	—	—	—	—
Christ Church .....	—	73	—	—	3,415	3,488
Trinity .....	—	270	—	—	—	270
St. John's .....	—	2,697	—	—	—	2,697
Jesus .....	—	217	—	—	4,347	4,564
Wadham .....	555	—	—	—	35	590
Pembroke .....	—	—	—	1,187	—	1,187
Worcester .....	—	—	—	—	—	—
Total .....	8,395	28,755	10,202	2,364	93,952	143,668

\* Transferred to Revenue Account.

† Including a *per contra* entry of 20,017*l.* included similarly in receipts.

TABLE XXIII.—*Contributions to University Purposes, 1883 and 1893 (omitting Shillings and Pence)*

	1883.					1893.				
	Professors.	Common Fund.	University Purposes Fund.	Other Purposes.	Total.	Professors.	Common Fund.	University Purposes Fund.	Other Purposes.	Total.
	£	£	£	£	£	£	£	£	£	£
University .....	—	—	—	—	—	—	147	—	—	147
Balliol .....	—	—	—	—	—	—	133	—	—	133
Merton .....	900	—	825	—	1,725	2,100	269	—	300	2,669
Exeter .....	—	—	—	—	—	—	115	—	—	115
Oriel .....	220	—	—	—	220*	310	—	—	—	310*
Queen's .....	270	—	—	—	270	262	192	—	—	454
New .....	787	—	62	—	799	892	225	—	—	1,424
Lincoln .....	—	—	—	—	—	—	—	307	—	—
All Souls .....	4,261	—	2,261†	—	6,522	3,346	—	—	150	3,496
Magdalen .....	2,000	—	—	—	2,000	3,306	1,237	—	77	4,620
Brasenose .....	200	—	—	—	200	788	161	—	—	899
Corpus .....	1,950	—	—	—	1,950	1,579	159	—	—	1,738
Christ Church .....	1,702	—	—	—	1,702	1,568	1,000	—	872	2,940
Trinity .....	—	—	—	—	—	—	108	—	—	108
St. John's .....	—	—	547	—	547	483	124	—	—	527
Jesus .....	400	207	—	—	607	400	260	—	—	660
Wadham .....	200	—	—	—	200	100	92	—	—	192
Pembroke .....	—	—	—	—	—	—	67	—	—	67
Worcester .....	—	—	—	—	—	—	45	—	—	45
Total .....	12,840	207	3,695	—	16,742	15,034	4,334	307	899	20,574

\* This sum is exclusive of a sum of 450*l.*, being part of a Canonry at Rochester now annexed to the Oriel Professorship of the Interpretation of the Holy Scripture, and directed by the Commissioners to be reckoned as a contribution for University Purposes.

† Apparently instituted for the adjustment of claims on the College Revenues. In 1887 and afterwards it is called the Statutory Purposes Fund.

DISCUSSION *on* MR. L. L. PRICE'S PAPER.

AFTER the preliminary formal business of the meeting, the PRESIDENT presented the Howard Medal to Mr. Leonard Ward, for his essay on "The Effects as shown by Statistics of British Statutory Regulations directed to the Improvement of the Hygienic Conditions of Industrial Occupations."

Mr. L. L. Price then read his Paper.

The PRESIDENT, in opening the discussion, said he had received a communication from Lord Onslow, expressing his regret at not being able to be present, owing to his absence in Russia.

He felt sure that he should be acting in accordance with the wishes of all present, in proposing a vote of thanks to Mr. Price for his valuable paper. It was one of those documents the value of which would appear more fully on careful study than on a first reading, and still more than on hearing it read. It would be read by all friends of the Universities with the keenest interest, and he might say, as a member of the sister University of Cambridge, with regret; he had been much struck by the remark made by the author, that the financial condition of the University had rendered it impossible to maintain in their full strength collegiate functions dependent on endowments, which the Commissioners did not propose to apply to a purpose other than that to which they had been devoted. He noticed that Mr. Price went on to say that the Colleges had not now the emoluments necessary to continue their present educational activity. That was really a very grave state of affairs, and must create a feeling of great regret amongst all friends of education in this country. The University of Oxford had received a magnificent contribution from Mr. Rhodes, and Cambridge also had received gifts which were highly appreciated. They had been for the most part devoted to scientific study. Even after acknowledging these contributions, it was impossible not to compare the benevolence shown by the friends of the new Universities, with the comparatively small gifts of those who were interested in the ancient Universities of Oxford and Cambridge. The University of Wales had at Bangor one of their Colleges, and that institution proposed to raise for their buildings no less than 175,000*l*. The amount proposed to be spent on the University of Birmingham was indeed gigantic—unless his memory was at fault, not far short of a million. When they came to the Colleges lately grouped together into the Victoria University, they found similar liberality; Owens College, Manchester, now the Manchester University; the

Liverpool College, now the Liverpool University; and the Yorkshire College, now the Leeds University—in each and all of these cases their friends had contributed in the most generous manner, and had set an example to the friends of the older Universities which he hoped, as a son of the University of Cambridge, they would take to heart, and show an equal liberality. He should not say anything on the importance of our great university system, which he believed was unique amongst the educational institutions of the world. He certainly hoped they would continue the same good work as they had carried on for so many generations, continually advancing in accordance with the wants of the times, but never forgetting that each want meant increased expenditure, and that it was only by generous liberality, partly from public funds and partly by private gift, that the weight of that heavy burden could possibly be endured.

Mr. J. B. LOCH, Bursar of Gonville and Caius College, Cambridge, said that Mr. Price's conclusions, which were no doubt true of Oxford, would also hold almost exactly with regard to Cambridge. The Commission which dealt with the statute and the revenues of the Colleges of Oxford and Cambridge came at a most unfortunate time. During the later seventies, when the Commission was sitting, the revenues of the Colleges from agricultural land looked as if they were going to increase "almost beyond the dreams of avarice." Agriculture was prosperous, and everyone thought that that prosperity would continue, and not only continue, but increase. But as soon as the Commission had ceased their labours, and almost before they had done so, came the disastrous year of 1879, and although the Colleges did not for some years realise what would be the full effect of the depression, yet there was an end of the dreams of increase, and, as Mr. Price had said, during the last twenty years both the Colleges and the University had really been very hard pressed in their endeavours to fulfil their obligations. Things were now, he believed, a little better, but if Mr. Price would continue his labours, he would be able to illustrate his conclusions still more clearly. Agricultural land should be separated from suburban land, and from land in small towns, which was, again, a very different kind of property to land in the centre of London. Some of the Colleges owned all kinds of property, and no conclusion as regards the income from one class of property could be drawn from the total income of a College. Take, for instance, one College in Cambridge—not his own—that owned land in the City of London. The income of that College within the last two or three years had been increased by several thousand pounds a year nett by the falling in of two leases in the City; a very good thing for them, but a very disturbing factor in considering the variations in the total incomes of all the Colleges. In the case of his own College, they used to have a farm, or what they called a farm, in the borough of Cambridge, bought in the beginning of last century

at a sale by auction. Until twenty-five years ago a farm rent was received for this land, but during the last twenty-five years practically the whole of this land had been let on building leases (with the exception of a portion which had been sold, and the proceeds invested in land elsewhere). The result of these transactions being so advantageous, that the income of the College from all sources was now practically the same as it was before the beginning of the agricultural depression. Unless one had been a bursar or a land agent, one could not realise what that agricultural depression had meant. To give an instance, he would mention a farm on heavy land in Cambridgeshire of about 220 acres, of which, twenty-five years ago, the rent was some 32s. per acre, or 350*l.* a year nett. Now the farm was let for 100*l.* gross; out of which the landlord had to do the repairs, to pay the tithes, land tax, and a drainage tax, and finally the College received about 40*l.* a year nett. As Mr. Price had pointed out, the statistics of agricultural land had altogether changed in the last twenty years, owing to the cessation of the grant of beneficial leases. But not only had beneficial leases ceased, but the terms of letting also had changed. The tenant no longer did repairs, nor paid tithes nor land tax. That would explain to some extent the extraordinary increase in what were described as "outgoings," &c., on farms, as compared with the gross incomes. The President had made a remark with reference to which, as a resident in Cambridge, he would like to say a word. The new Universities in the North and West were welcomed by the older Universities. These new institutions would have among their students a great many young men who would come up to the older Universities well prepared to grapple with advanced study, and Oxford and Cambridge were delighted to see the large sums of money given to them for endowment and for buildings. But the Universities of Oxford and Cambridge had not only to give young men the opportunity of obtaining a good education in all branches of literature and science, but they had to do a great deal more than that: they had to advance science and learning of all kinds. In Cambridge they had a large body, two or three hundred men, at work investigating and researching into all kinds of science in its widest sense; some of whom come absolutely for the love of research, and because in Cambridge they met with men learned in their own particular branch of science. But the number of scientific men who could afford to work without pay was very limited, and money was wanted not only to pay men who were willing to come, but to provide new buildings, with suitable equipment, which were absolutely necessary in order that these students and teachers might carry on their work. As the President had told them, they had done something, having spent in the last few years, with what they had borrowed and begged, about 150,000*l.*, but anyone who had seen the paper which had been drawn up showing the needs of the University of Cambridge, would recognise that what had so far been accomplished was a mere nothing compared with what could and ought to be done if means could be found. That was the answer to what was so often said, that Cambridge and Oxford were

rich ; so they were, but they had so much to do. They wanted more, and he believed it would be for the advantage of the Empire if they could get it. It appeared from Mr. Price's figures that the Colleges as a rule, notwithstanding the bad times, were somewhat improving their revenues. Speaking for his own College, and looking back with knowledge of the management for the last twenty-five years, he believed that the policy of the Colleges of both Oxford and Cambridge was to look to the future ; to spend money freely on substantial improvements, and generally to treat their property so that it should be handed on to their successors in a better and sounder condition than that in which they received it. He had no doubt that the figures Mr. Price had prepared would be extremely valuable.

Major CRAIGIE said that, looking at the work of their Society as a whole, papers reviving the interest of a former discussion and carrying forward the information to a later date formed one of the most important features of their records, and he welcomed cases like this, where statistics were made continuous. They hoped to have in the present session more developments of this nature of past work. With regard to the points now put before them, he would ask Mr. Price if he could explain the failure of the item of College receipts from tithes to compare with the movement of the septennial average which determined the yearly value of the tithe rent charge ? A striking want of statistical congruity appeared between the aggregate sums received and the relative level of the rent charge. Taking round numbers, it seemed that while the tithe receipts declined in 1883 to 1893 from 49,400*l.* to 42,000*l.* ; in the second ten years the fall was still from 42,000*l.* to 38,000*l.* Looking, on the other hand, at the actual figures of the septennial average, the decline in the second ten years was only one-sixth as great as in the earlier period. The yearly value of 100*l.* of tithe which in 1883 was just under par, viz., 98*l.* 16*s.*, had fallen by about 24*l.* in the 100*l.* in the year 1893, or to 74*l.* only ; whereas in the second decennial period the drop from 1893 to 1903 was comparatively infinitesimal in the rent charge, only a matter of about 4*l.* in the 100*l.*, or from 74*l.* to just under 70*l.* per 100*l.* These figures ran in a totally different curve from the figures of the total receipts of the Colleges. No doubt there was some explanation. Whether the item of tithe meant only the current tithe rent charge in the College accounts he did not know, or whether the later deduction indicated loss of tithe which had not been recoverable, perhaps Mr. Price would be able to tell them ; but he had thought the point was one which it might be worth while to look further into, because of the large proportion of the external revenues of the University of Oxford based apparently on tithes. He hoped they might induce Mr. Loch and some other Cambridge bursars to follow Mr. Price's good example, and to give them a parallel statement of the affairs of the University of Cambridge, as it would be interesting to compare the fortunes of the two Universities. And if that were

done, he would suggest to the compilers of the paper not only the introduction of the differentiation Mr. Loch had mooted, but the introduction of a little geographical analysis as to the situation of the lands which showed the greatest depression. The fate of each College largely depended on the parts of the country in which the different Colleges held estates. That would be useful, if it were not ungracious to ask for anything more detailed after the surfeit of figures Mr. Price had with so much care and perspicuity put before them.

Mr. DRUCE (Secretary of the Farmers' Club) said that, speaking as a representative of the agricultural interest, and of the tenant farmer in particular, he welcomed the statement contained in the paper, that "the form of tenure of College lands known as the beneficial lease may be declared now to have come within measurable distance of extinction."

The beneficial lease of former days operated to the detriment both of lessor and lessee: of the lessor, because he did not obtain the full rent of his property, and had to expend considerable sums initially in carrying out repairs, &c., on buildings which frequently, at the end of the lease, had fallen into decay, owing to the lessee having left his obligations unfulfilled; and of the lessee, since, having no inducement to keep up the farm, he came to look upon its possession as a matter rather of enjoyment than of business. Under the conditions usually prevailing at the present time, the tenant farmer knew his precise position, and it was well that he did. He was a farmer and not a county squireen. Further, the lessor benefited, for even after expending money on repairing and equipping the farm, he received a fair rack rent for it.

They were greatly indebted to Mr. Price for both his papers, and having been present at the reading of the former paper ten years ago, he would re-echo the hope expressed by their ex-President, Major Craigie, that Mr. Price might have an opportunity of reading a further paper on the same lines ten years hence, and that he, the speaker, might be again permitted to hear it.

Mr. A. H. H. MATTHEWS, Secretary of the Central Chamber of Agriculture, observed that Mr. Price's paper of ten years ago, taken together with the present one, was most valuable as a reply to the contentions of certain would-be politicians, who endeavoured to prove that the period of agricultural depression had passed away. He had good reasons for believing agricultural depression to be almost as acute now as it had ever been. When he heard such references to the enjoyable and comfortable circumstances of tenant farmers in former times, as there made by Mr. Druce, he almost regretted that he was not old enough to remember them himself, but he was bound to confess that agriculture as known by him had always been a keen struggle for existence.

Mr. MOORES said he wished to make a suggestion, which Mr. Price might take into consideration in writing another paper

on this subject, and if Cambridge followed this up with a similar paper, they might also adopt the suggestion, namely, to separate the amounts for rates and taxes and for insurance. He had been making a considerable study of railway rates and taxes covering twenty years, and he found it had most valuable lessons to teach, and he believed that if the rates and taxes question in connection with agriculture and agricultural land could be brought out, it would help considerably in the general study of this question.

Mr. WELTON suggested that if rates and taxes were separated from insurance, it would be equally desirable to separate income tax from the rates, because the two things were governed by quite a different history.

Mr. PRICE, in replying upon the discussion, observed that one or two suggestions had been made with which he would have been only too happy to comply if it were possible; but in examining the published accounts of the Oxford Colleges, as in examining most statistical material not prepared specially for the purpose, the first impression that was produced upon the mind, and the last that was left, was that one had almost to torture the available figures in order to get any trustworthy or valuable results, and without individual inquiry made of each particular bursar it would, for instance, be quite impossible by the aid of the published figures alone to separate rates and taxes from insurance, and to make a further separation between rates and taxes. One could only take the published figures as they stood. He had emphasised in the paper the fact that we could only draw broad conclusions from the figures of the College accounts, and he did not think they could be pushed with safety into minute detail. With respect to the point raised by Mr. Loch, his own impression was that in the accounts of the Oxford Colleges receipts from lands would in most cases refer to agricultural lands, and that receipts from urban lands would probably fall under the head of receipts from houses, or sites of houses let on long lease. There might of course be a difference in the system of keeping the accounts between the different Universities or the different Colleges, but in the case of his own he had no doubt that receipts from land would, with little exception, represent agricultural land. With regard to Major Craigie's point as to the fall in the receipts from tithe failing to conform with the changes in the septennial average, it was impossible, from the evidence furnished by the published accounts alone, to say whether in every successive year the figures referred to the same amount of property. Changes were continually taking place in the property of the Colleges, and redemptions of tithe, for example, were frequently made, and these changes would of course influence the results; but if only broad conclusions were drawn, those, he thought, might be regarded as secure. Yet we could not take it for granted that the same quantities were always referred to, the same acreage of land, for instance, or the same amount of tithe. It was possible, but hardly likely, that an accident of



collection might to some extent account for the difference from the septennial average. Probably the Colleges had on the whole diminished the amount of tithe they held. Redemption of tithe had been constantly going on on a more or less extensive scale.

Mr. LOCH remarked that the Colleges used to grant beneficial leases of tithe.

Mr. PRICE said that would no doubt affect the question, and thus into these comparisons also the disturbing influence of the beneficial lease would enter. With regard to Mr. Druce's remarks on the beneficial leases, he had no doubt that all administrators of College property would be in entire agreement with him. He remembered that a distinguished politician, now dead, whose name, therefore, he had perhaps better not mention, once said on a public occasion that he thought that some of the most discreditable landed property in the country, in respect of the state of its buildings, was that which belonged to the Colleges; but in making this statement he probably did not remember that his own acquaintance with College property had been gained during the prevalence of the beneficial lease. It was undoubtedly the case that when the beneficial leases came to an end, more expenditure than was anticipated was required to put the property into order; but if that politician were still alive to-day, and were to go round the agricultural property of the Colleges, he ventured to think that he would find that it compared generally very favourably with the condition of any other property throughout the country, and this was not merely his own belief, but he had seen it confirmed from other quarters. One proof of that belief was that, taking the whole period of agricultural depression, he imagined that the Colleges had perhaps less difficulty in letting their land than other landlords had experienced. Tenants preferred to hold under a College, for they felt that a College—partly no doubt because it derived some of its property from other sources—was likely to be a liberal landlord; and there was, he believed, no doubt that, in regard to the provision of cottages and to the general improvement of their estates, the condition of College property would not justify to-day the statement of the distinguished politician to which he had referred. If it was felt that the estimates which he had presented were of a somewhat tentative and incomplete character, it must be borne in mind how difficult it was to get behind the figures. To some extent, of course, it was possible, and if on a future occasion he should be able to examine the accounts of his own College in more detail, he might be able to pass behind the figures and to see the exact state of affairs. His experience of his own College confirmed the general conclusion at which he had arrived in the paper, that the fall in agricultural revenues had continued during the last ten years at a diminishing rate, and he himself thought that, looking at the general situation to-day, although the season of 1903 was peculiarly unfortunate in many respects, yet the agricultural situation as experienced by the Colleges was more encouraging than

it was some ten years ago. Notwithstanding great loss of revenue, there was a general feeling, as regarded the Oxford College lands at any rate, that things had reached a condition in which it was possible to act with some confidence in the future, and if the tide of depression had not turned, matters would at any rate probably not become worse. Though that was, perhaps, not a very cheering conclusion at which to arrive, such a situation did enable both landlords and tenants to look forward to the future with less misgiving.

The vote of thanks was passed unanimously.

The following were elected Fellows of the Society :—

Khoshru Nowrosji Banaji.	Willem Margriet Johan van Lutterveld.
Arthur Francis Dymant.	Richard Mudie-Smith.
William Edward Hill.	Louis G. Schlesinger.
Frederick Tungate Hooper.	Gerard Nicolaas de Stoppelaar.
John Milton Watkins.	

## MISCELLANEA.

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I.—*The Geographical Distribution of Population in India.*<sup>1</sup>

By J. A. BAINES, C.S.I.

THE complete presentment of the numerical relation between the land and those who inhabit it, is a subject beset with manifold and difficult questions before it reaches the comparatively untroubled haven of long division sums, with which it is usually associated. Take, for instance, the divisor. What is land, and how far does it include water? It evidently cannot be credited with estuaries and inland seas, but where is the line to be drawn in the case of smaller areas, such as lakes and the beds of large rivers? The question arises, again, except perchance in Mediterranean countries, where it is not, if I may so call it, a burning one, whether the area left dry at low tide is to be accounted land, to be divided into the population of which a portion may gather winkles, wreckage and other unconsidered trifles from it, or as water? In connection with the same point another question arises as to whether tracts of considerable extent which human beings not merely do not, but cannot, inhabit, should be included in the area over which the population is to be spread on paper? All these are matters in connection with which uniformity of treatment is obtainable by agreement among the geographers and statisticians of different nations, and has, in fact, been very materially achieved, and if the object for which the calculation of density is made were merely the general comparison of the total result for one political unit with that for another, the question might be said to be at rest.

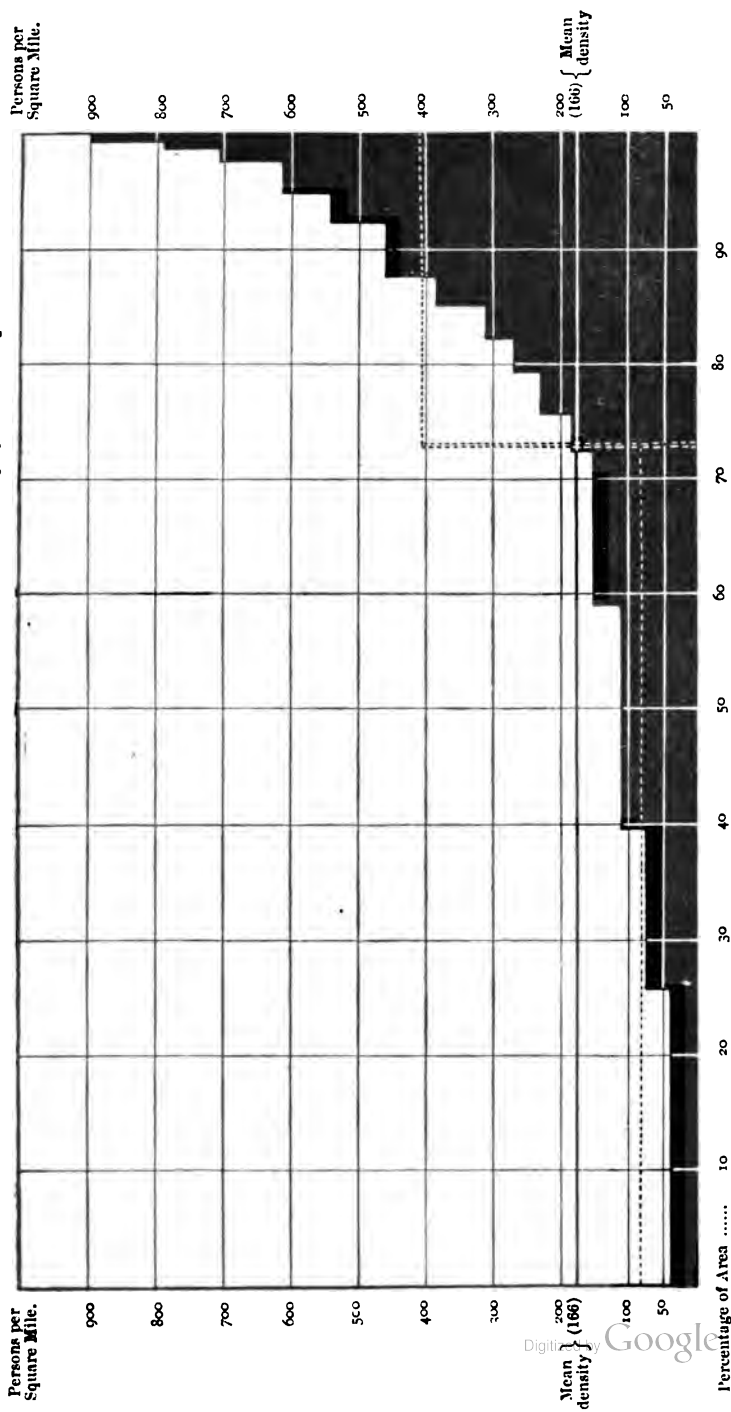
Unfortunately, however, density is a term relative to no single standard, and the numerical test carries the inquirer no further than the first stage. By it we learn that within a certain territory

<sup>1</sup> Prepared for the British Association, but not read before it.

the population is spread, assuming equal distribution, in the ratio of so many to the square mile, and that in another territory that number is halved or doubled, as the case may be. Except, perhaps, in some of the more extreme cases, it is impossible to judge from these figures whether the areas in question are well-peopled, half-peopled, or crowded, without recourse to some other standard, which I will tentatively call the economic, as distinguished from the arithmetical density. In applying this, we look at resources as well as extent and numbers. The area must be regarded in reference to its proportionate agricultural or mineral productivity, and the population, either in relation to that productivity or to its independence of locality in regard to the means of its subsistence. I may remark, in passing, that this last consideration is important in estimating the statistical value of the figure of mean density, since, in the one case, a population is usually spread more or less widely over the cultivable area, thus giving its mean density a character more representative and in accordance with the facts than it bears when, as in the other case, a population highly industrial follows its tendency to congregate into detached urban centres. Even apart from this consideration, I may observe that there are few, and those generally small, countries so uniform in physical characteristics and in resources as to yield a mean density figure really representative of any but a small proportion of the total area, and are best used, therefore, when heavily weighted, in the statistical sense, by the addition of the percentage of mean variation from them respectively. For example, taking even such small countries as Saxony and Belgium, the density of the former, 727 per mile, bears a mean difference of 17 per cent., and the 589 per mile of the other, one of no less than 45 per cent., these being the proportions in which each subdivision differs, on the average, in density from the general figure.

In the case of India, what with the size, the climatic and other physical variety it contains and the number of different communities which inhabit it, the mean density figure is in itself peculiarly devoid of significance, as I show below, but it is most useful as the measure of the extent to which the actual weight of population upon the land diverges from it, both above and below. By the results of the census of 1901, this figure stands at 170 per mile, but for reasons I give later, I eliminate from the calculation the population of the larger cities, and base my analysis upon the reduced figure of 166, which is, I believe, about half the density of England and Wales without London and the county boroughs. Taking first the broad division into the areas respectively showing a greater and a less density than 166, the former amount to 27 per cent. of the area and two-thirds of the population, with a mean density of 407 per mile.<sup>2</sup> On the other side, we have a third of the population but 73 per cent. of the area, with a density of 76 per mile. The units of area taken as the base of compilation being distributed according to the percentage of the variation of each from

<sup>2</sup> See diagram.

*Diagram showing the Distribution of Area in India according to Density of Rural Population.*

*Note.*—The dotted lines show the mean-density below and above 166 per mile, with the area-percentage on each side.

the mean, range from the density of 4 per mile to one of over 900, irrespective of suburban tracts, which obviously, as in this country, stand in a class by themselves. Within 25 per cent. of the mean density, that is, with from 125 to 207 per mile, we have no more than 17 per cent. of the area and 16 of the population. Doubling the range, and including densities of from 83 to 166 on the one side, and from the latter to about 250 on the other, we enclose 40 per cent. of the land, but only 33 per cent. of the people. The inequality thus indicated is more apparent if we take the lowest density as the starting point, and extend the limit upwards to 332 per mile, or double the mean density, which gives us 85 per cent. of the area, but excludes 49 per cent. of the population. Thirty per cent. of these live in the ratio of nearly 500 per mile and over, and 12 per cent., the equivalent of the whole population of England and Wales, have less room than one acre per individual. The mean divergence in density of each unit is about 97 per cent. Passing over, for the moment, the extraordinary densities which head the roll, the features which stand out most prominently from this singularly irregular distribution are, first, the very high proportion of 40 per cent. of territory bearing no more than about 40 people to the mile, and, again, the aggregation of population at densities of about 125 and 530, amounting respectively to 25 and 30 per cent. of the total. Proceeding from the extremes towards the mean, it appears that the population of the four highest and the three lowest groups in their aggregates balance each other, and it is only the immense preponderance of territory in the lower groups that pulls down the weight of the greater population of the groups of double and treble the mean density. All this, however, being matter suited for graphic representation rather than for verbal description, can be appreciated from the appended diagram A.

I pass, then, from the arithmetical aspect of the question to the economical. The fundamental considerations which have to be kept in view are, that India is a country where the inhabitants are in the main vegetarian, producing their own food under tropical conditions. The cultivation of the soil, accordingly, occupies the attention of from two-thirds to four-fifths of the working population of the different parts of the country, and it has to be carried on under the advantages as well as the drawbacks of a periodic rainfall or inundation, as the case may be. Other resources there are, no doubt, but they are of comparatively recent development and more or less localised. In the distribution of the population, therefore, the immediately determining factor is, in brief, the extent and productivity of the cultivable area. As to the former, in the large hilly tracts it is restricted by the conformation of the country, and in Sindh by the range of the annual inundation, but elsewhere it may be said to depend upon the rainfall, as does, with certain favoured exceptions, the yield it returns to the labour expended upon it. Thus, ultimately, the supporting power of the land is here a question of rainfall, and by this is meant not only the amount but also its liability to vary from season to season, though in the cases where the fall is heavy there is a margin which allows

of a considerable falling off before it amounts to deficiency, in the agricultural sense, whilst, provided the excess falls at the normal dates, there is, for similar reasons, no complaint of flooding. The fall, as a rule, corresponds fairly closely with the natural divisions of India by coast, hill-tract, river-plain, plateau, and so on, and the population, according to this distribution, falls into twenty groups, which have been adopted in the census report, and which appear to me to be the most instructive I can take for my present purpose. It must be explained that the mean density and consequently the population and area which fall above and below it respectively, is not that used for the remarks made just now, since in the present case it is unnecessary to exclude the population of the large cities. I have added, also, a column to the table indicating what I may call the figure of climatic merit, based on the combination of a high rainfall and a low variability. On the face of it, the table shows only occasional evidence of the alliance of high density with high climatic merit, whilst there are abundant instances to the contrary. I am of opinion, however, that when one comes to consider the figures along with the history and present circumstances of the divisions in which this incongruity occurs, the general tendency seems established for the density to rise with the rainfall and its certainty. Take, for example, the three first divisions which stand first in climatic merit, all being low in density. The first and third are in Burma, a province which political disturbances kept back until British occupation, but which is now the principal rice-granary of Europe and the near East. That the sparsity of its population is thus accidental seems clear from the percentage of increase, which has been between 21 and 25 at each of the two last enumerations, so that its low place on the list is only temporary. The Brahmaputra Valley, again, which comes second in advantage of rainfall and variability, was the scene of continual inroads, expulsions and general Mongoloid ferment till within comparatively recent times, and now that it is settled, the slow growth of population over what is an undoubtedly fertile region is due entirely to the unhealthiness of the most cultivable tracts, where the existing population has been kept down for the last twelve or fifteen years by a special form of endemic malaria. To take another aspect of the case, there are localities such as the western Gangetic plain, where the effect of a comparatively low rainfall and high variability is neutralised by the facilities for supplementing the natural water supply by artificial means, and this is also, in part, the cause of the high density of the south eastern coast and other parts of southern India. Elsewhere we find a low density under apparently favourable climatic conditions, accounted for by the paucity of land available for cultivation, as in the hilly tracts of Central India along the Satpuras; whilst Gujarat, which owes its title of the Garden of Western India entirely to the fertility of its southern mainland portion, comes low on the list in density by reason of the large area of light soil and low rainfall in its peninsulas and the adjacent territory north-east of the Gulf of Cutch.

On examining the territorial units of which each of these climatic divisions is composed, it appears that with the exception of a comparatively small group in the sub-Himalayan Panjab, all the higher densities are found on the coasts or along the Ganges. The upper portion of the latter tract, extending to the Jumna, consists of a vast alluvial plain of remarkable fertility, where the light rain fall is supplemented, as I have said, by extensive irrigation from canals or wells. Further down the river, again, and on the north bank, we come across another group of remarkable density, on land that has been found specially adapted to the growth of highly remunerative crops other than those used for food, such as the poppy and, up to quite recently, indigo. Apart from these tracts, the higher densities are bound up, so far as I know, with the growth of rice. This plant yields a return in grain heavier than that of any other cereal, and it is only grown to perfection under climatic conditions of heavy rainfall and of small liability to seasonal variation. It is not so much the rice itself that brings up the population, but the certainty of subsistence that the prevalence of rice cultivation implies. Even without quoting these areas of abnormally high density, I have noticed that in other parts of India, on a far more moderate scale, a tract that will grow rice has a tendency to pile up its population. I must add, however, that proverbs amongst the millet and pulse-eaters bear hardly against those who trust to rice for their support.

I now revert to a subject to which I have before referred in passing, the more even dispersion of the population over the area in a community largely agricultural than where the necessities of manufacturing industry on the modern scale and system drive people in masses into large towns. In India the tendency to what is now called by the hybrid term urbanisation, is remarkably weak, although the country is by no means without its quota of towns of considerable local importance. The reconciliation of the two facts lies apparently in the origin of the older towns, which was political, not economic. The military possessor, or disposessor, of a tract often established his fort and garrison in the midst of a thinly peopled country for strategic purposes only, and thus a nucleus was formed of artisans and merchants, under the protection and patronage of the Chief, which in times of peace grew to be the commercial centre of the State. With railways and foreign trade a new class of city has sprung up, and even the smaller towns on a trunk line present increasing attractions to the neighbourhood. It is almost proverbially difficult to define a town for statistical purposes in such a way that one country can be compared with another as to the proportion of its urban population, because each draws the lower line at a different point or on different considerations. In all, India returns 10 per cent. of its population as urban, and this country 77 per cent. Lancaster—to take extremes—has 5 per cent. of its population rural, and Bengal the same proportion urban. It is safer, however, to ignore the discretionary or constitutional considerations involved in the selection of places for entry in the lower grades of the town for census purposes, and to consider only



the larger units, about which there is less doubt. The limit of 20,000 inhabitants per town includes 5 per cent. of the total population of India, and 58 per cent. of that of England and Wales. But for the purposes of this paper I find I ought to go still higher, and draw the line somewhere about 50,000, which includes 3 per cent. of the population in 80 units. Put in another form, this means that in India, assuming the towns to be equally distributed over the whole area, and excluding from the latter the wild outlying tracts of Baluchistan and the Burma States, each city of 100,000 and over, is 212 miles from the next; the cities of 50,000 and over, are 152 miles apart, whilst a distance of 86 miles would separate every town and city of 20,000 and upwards. It was on the consideration of this overwhelming preponderance of the rural element in the composition of the population of India that I withdrew the large urban units from my calculations of density, and, relatively small as the aggregate is, it is enough to in some degree affect the results, especially in certain localities, whilst in others it makes no difference. For instance, in Bengal I find a population of over 45,000,000 in the north, east and south, with only three towns of more than 50,000 inhabitants, and none of more than 90,000. It is curious to note, too, that it is in the most densely peopled tracts that the population (outside the suburban influence, of course) is most predominantly rural. The only exception is Tanjore, with the seat of a former native capital a seaport, and the home of a large professional class.

The remaining portion of my subject relates to the connection between the movement and the density of the population, and on this important point I regret to have but little to offer that I can put forward with confidence. As all are aware, the set-back that the population receives in tracts so severely visited by famine as have been some of those in the centre and west of India of late, renders comparison with the results of the preceding census of little value. The latter, moreover, I am bound to say, were more favourable than the circumstances of the country justify us in holding to be normal. There had been before 1891 ten years substantially free from famine, and the annual rate of increase of about 1.05 per cent., low as it is in comparison with that recorded for some of our western countries, seemed to me at the time to be unduly high and not likely to be maintained in the succeeding period. I unfortunately turned out to be a true prophet. But setting on one side the famine-stricken tracts, it seems that the rate of increase, even in those not so afflicted, shows a tendency to fall off in most of the more densely peopled regions, as if the districts were approaching repletion. Of course the improved accuracy of the enumeration in the more scattered Native States must be credited with a portion of the higher rates of increase they now show over the more settled country, but this explanation does not by any means cover the whole ground, and I see no reason to doubt that in some cases, not perhaps very numerous, the period of congestion is not far off.

Now, the point I have to bring forward in connection with this

is, that under the present conditions of economical distribution of function in India, nearly the whole of whatever addition may thus be made to the population year by year tends to fall, and in most cases does fall, upon the cultivable area and on that alone, and, on this consideration, a tract like Jesalmer with 4 per mile, is far more densely peopled than a district in Lower Burma with 40, or than one in Bengal with 400. In the greater part of India, as throughout Burma, there is still room for the additional burden to spread itself over an expanded base. In other directions the addition, whilst still remaining upon the same area, is enabled by facilities for irrigation, or by improved methods of cultivation, to extract the required increment to the annual produce. All this, however, may check the current but does not divert it, and the day of reckoning is but postponed. The overflow may be utilised, probably, in several ways. It may be turned on to fields of labour, either of the same class in other lands, or of a different class in its own. The latter process has already made considerable way of late years.

The jute industry attracts more and more of the young men of the densely peopled districts of Oudh and Bihar to Calcutta and further east. Similarly, the development of the coal fields of Bengal is proceeding more rapidly of late than for many years past, and that of the Burma petroleum supply has good prospects. There is certainly a more effective demand for labour than ten years ago at all the large centres, and wages are rising. Still, India is a large country, and the race, language, and customs change every few hundred miles, so that the wrench to the emigrant is more severe than elsewhere. The railway has done much to dispel his suspicion of what are to him foreign parts. When I went out to India in 1870, the mileage was but 5,000, and it is now nearly 27,000. Nevertheless, I see from the census returns that about 97 per cent., or about the same proportion as ten years ago, of the inhabitants of India were born in the district in which they resided at the time of enumeration or in one of those contiguous to it. Even the larger cities, except the great seaports Calcutta, Bombay, Rangoon, and Karachi, return nearer 90 than 80 per cent. of their population as native born. Considerable as is the number of labourers from outside employed in the mills and docks at these places and at provincial centres such as Cawnpore, it is insignificant in comparison with the population which provides them. The same may be said of the emigration to foreign countries, much of which is only temporary. It is a matter of fashion and convention. Once a district gets into the way of emigrating, it will emigrate, and the flow in and out, though on a very small scale, will be constant. As sea communications get cheaper and more comfortable, the stream is likely to increase, and many emigrants may even settle in the land of their sojourn, as in Mauritius, Uganda, and Natal, not to mention the colonies of Guiana and Trinidad. These are, however, at present a minority, and the object of most of the emigrants is to make enough to acquire some land in their native village, and there to squat after the manner of their forefathers, with the added

pleasure of swapping lies about foreign parts, whilst the hookah is passing round the circle under the village tree. Thus all comes back to the land.

TABLE A.—*Distribution of Rural Population in India.*

Ratio of each Group to Mean Density of 166.	Mean Group-Density.	Group Percentage on Total of				Increase per Cent.		
		Area.		Population.		1881-91.	1891-1901.	1881-1901.
		1901.	1881.	1901.	1881.			
Over 5·00 ...	899	1·29	1·60	7·00	6·81	9·3	8·8	18·9
4·50—5·00 ....	789	0·19	0·23	0·84	0·93	3·0	2·2	5·3
4·00—4·50 ....	705	0·85	1·05	3·57	3·86	8·4	— 1·5	6·8
3·50—4·00 ....	617	2·56	3·16	9·50	9·83	6·9	4·5	11·8
3·00—3·50 ....	542	2·75	3·39	8·97	9·36	5·9	4·7	10·9
2·50—3·00 ....	459	4·62	5·70	12·75	13·42	6·8	2·9	9·9
2·00—2·50 ....	381	2·75	3·39	6·31	6·35	7·9	3·5	11·2
1·75—2·00 ....	312	2·11	2·60	3·96	3·89	13·3	4·0	17·8
1·50—1·75 ...	275	3·62	4·46	5·98	5·76	13·5	5·8	20·1
1·25—1·50 ....	228	3·24	3·99	4·43	4·37	14·1	2·9	17·4
1·00—1·25 ....	181	3·23	3·98	3·52	3·66	11·9	— 0·7	11·1
0·75—1·00 ....	147	13·88	16·99	12·27	12·29	14·9	— 0·2	14·6
0·50—0·75 ....	106	19·51	23·23	12·50	13·11	14·3	— 6·3	6·7
0·25—0·50 ...	62	13·85	15·41	5·18	5·03	19·7	— 7·9	7·8
Under 0·25....	23	25·55	10·82	3·22	1·13	27·7	9·3	27·5
Total.....	166	100·00	100·00	100·00	100·00	11·0	1·4	12·2

*Note.*—The area included in the census of 1881 showed a mean density of 177, which rose to 197 in 1891 and to 199 in 1901. In 1891 Upper Burma and Kashmir were enumerated for the first time, adding to the census total an area of 163,573 square miles, with a population of about 5·3 millions. The rural density was then 179, rising to 182 in 1901 on the same area. In the latter year the census was taken for the first time of Sikkim, the Lushai country, the Shan States, and parts of the Upper Burma frontier, the North-West Frontier, and of Baluchistan, containing in the aggregate a population of about 2·38 millions, on an area of 159,805 square miles. The fall in the mean density, therefore, since 1881 is due to the addition of territory with a population of no more than about 25 per square mile.

TABLE B.—*The Distribution of India by Natural Divisions.*

Divisions in Order of Density.	Percentage of each Division on Total		Density per Square Mile.	Mean Annual		Serial Order in Climatic Advan- tage.	Variation per Cent. in Population Between 1891 and 1901.
	Area.	Popu- lation, 1901.		Rainfall in Inches.	Vari- ability.		
<i>A. Density above mean, 170.</i>							
1. Bengal delta .....	3.8	12.2	552	79.4	71.3	5	+ 7.7
2. East Gangetic plain .....	2.4	6.7	490	47.5	84.7	8	- 2.2
3. East Himalaya and } sub-montane.....	4.4	12.3	477	71.9	108.3	7	+ 1.5
4. West Gangetic plain .....	4.3	10.2	409	30.9	130.3	16	+ 5.5
5. East coast, south .....	1.6	3.4	359	48.0	128.0	13	+ 5.1
6. West coast .....	2.1	4.1	334	104.3	94.2	4	+ 6.5
7. South India.....	3.8	5.7	260	33.2	94.2	12	+ 9.8
8. East coast, north .....	4.1	5.5	229	51.5	105.4	10	+ 9.1
<i>Total above mean ....</i>	<i>26.5</i>	<i>60.1</i>	<i>390</i>	<i>58.3</i>	<i>102.0</i>	<i>....</i>	<i>+ 4.9</i>
<i>B. Density below mean.</i>							
9. Deccan .....	9.1	8.0	151	29.7	138.0	17	- 2.0
10. West Satpura .....	2.6	2.2	147	39.1	127.3	14	- 2.4
11. Gujarat .....	3.9	3.1	136	27.6	181.8	19	- 15.5
12. Central India plateau .....	7.7	5.5	123	34.6	127.5	15	- 17.2
13. West Himalaya } and sub-montane }	8.4	5.9	121	50.4	101.0	9	+ 3.3
14. East Satpura .....	8.9	5.7	110	57.7	91.0	6	- 4.5
15. Brahmaputra valley .....	2.1	1.0	84	92.3	64.2	2	+ 5.8
16. Burma, dry zone.....	2.3	1.0	79	32.6	88.0	11	+ 11.7
17. North-West, dry } zone .....	11.8	4.6	67	11.4	194.8	20	+ 4.5
18. Burma, coast .....	3.6	1.3	63	152.9	45.1	1	+ 27.1
19. " wet zone ...	8.6	1.3	27	64.3	53.3	3	+ 21.1
20. Baluchistan.....	4.5	0.3	11	8.7	161.0	18	....
<i>Total below mean ....</i>	<i>73.5</i>	<i>39.9</i>	<i>94</i>	<i>50.1</i>	<i>114.4</i>	<i>....</i>	<i>- 3.4</i>
<i>Total .....</i>	<i>100.0</i>	<i>100.0</i>	<i>170</i>	<i>52.2</i>	<i>111.4</i>	<i>....</i>	<i>+ 1.5</i>

*Note.*—This table refers to an area of 1,708,000 square miles, with a population of 294,282,000; but in the last column, tracts enumerated for the first time in 1901 not having been included, the area taken is 1,545,300 square miles, with a population of 291,616,300. The inclusion of the cities raises the mean density above that used in the other table.

## II. — *The Austrian Census of Occupations, 1900.* By H. FEHLINGER.

STATISTICAL research concerning the occupations and the social classification of a population is at the present day a matter of vital importance. In Austria inquiries of that kind were first conducted in 1869 and 1880, but the results of those enumerations are not comparable with the data obtained at the censuses of 1890 and 1900, which contain valuable information concerning the economic and social conditions of the population of the Austrian empire.

The results of the Austrian census of occupations, taken on 31st December, 1900, have just been published.<sup>1</sup> The inquiry with respect to occupations was made on the population schedule of the general census. Every person, without regard of age, has been included in the enumeration.

With slight modifications, the form of classification drawn up for the census of 1890 was adopted again; accordingly the figures obtained in both years are comparable.

The population engaged in gainful occupations has been divided into four classes: 1, Agriculture and forestry; 2, manufactures; 3, trade and commerce; 4, official and professional service; which classes are further subdivided, so that the whole number of occupation designations for which a separate presentation is made is 182. All persons employed either by the State, the municipalities, &c., whose occupations are related to producing, trade, and commerce are classed with the latter.

So far as the principal division of the population into breadwinners and dependents is concerned, the following summary shows the number of persons in each division, the total population, and the increase during the last decade:—

	1890.	1900.	Per Cent. of Increase.
Breadwinners .....	13,569,287	14,108,596	3·97
Dependents—			
Family members .....	9,869,849	11,563,356	17·16
Domestic servants .....	456,277	478,756	4·93
Total population ....	23,895,413	26,150,708	9·44

The number of dependents to every 1,000 breadwinners in each class of occupations is as follows:—

	1890.	1900.
Agriculture, &c. ....	576	671
Manufactures .....	1,139	1,231
Trade and commerce ....	1,496	1,513
Official and professional service .....	654	640
Total .....	761	854

<sup>1</sup> *Österr. Statistik*, vol. lxxi, Vienna, 1904.

The proportion of dependents to persons engaged in gainful occupations is higher in 1900 in each group than ten years ago; it is largest in trade and commerce and in manufactures. The larger part of the agricultural population, on the other hand, consists of gainful workers. In the occupation class, official and professional service, a larger proportion of unmarried persons is included than in all other classes; this accounts for the relative small percentage of dependents. The causes of the increase in the proportion of dependents will be found in a decrease of female labour, a falling off in the relative number of males under 20 years employed, and in the rising of the birth-rate, &c.

Occupations of the breadwinners are the main consideration from an economic point of view; it is of advantage to consider this group in itself. The whole number of breadwinners is distributed in the aggregate and by sex, according to the number and percentage in each grand group of occupations, in comparison with similar results for 1890, in the following summary:—

	Aggregate.		Males.		Females.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
1900.						
Agriculture .....	8,205,574	58·2	4,082,715	49·5	4,122,859	70·5
Manufactures .....	3,138,800	22·3	2,420,902	29·3	717,898	12·2
Trade and commerce	1,036,483	7·3	739,635	8·9	296,798	5·1
Official and pro- fessional service }	1,727,739	12·2	1,014,791	12·3	712,948	12·2
Total .....	14,108,596	100·0	8,258,093	100·0	5,850,503	100·0
1890.						
Agriculture .....	8,469,223	62·5	4,164,642	53·8	4,304,581	74·0
Manufactures .....	2,880,897	21·2	2,155,860	27·8	725,037	12·4
Trade and commerce	845,073	6·2	596,355	7·6	248,718	4·3
Official and pro- fessional service }	1,374,049	10·1	831,744	10·8	542,350	9·3
Total .....	13,596,287	100·0	7,748,601	100·0	5,820,686	100·0

The whole number of males engaged in gainful occupations in 1900 was 8,258,093 (against 7,748,601 in 1890), constituting 64·3 per cent. of all persons of this sex. The whole number of females who were gainfully occupied in 1900 was 5,850,503 (5,820,686 in 1896), constituting 44·0 per cent. of all female persons. There is a large proportion of females in each group of occupations, which is highest in agriculture and professional and official service; in 1900, according to the census, out of every 1,000 breadwinners devoted to agriculture 498 (492 in 1890) are males and 502 (508 in 1890) females, while in the manufacturing industries the employment of females is considerably less; out of 1,000 persons engaged in this class of occupations 771 (748 in 1890)

are males and 229 (252 in 1890) females. In trade and commerce the proportion is 714 (706) males to every 286 (294) females, in official and professional service 587 (605) males to every 413 (395) females. As compared with 1890 there have been increases in the proportion of males engaged in agriculture, manufacturing, trade and commerce, while the proportion of females decreased in all classes except official and professional service. The decrease of the employment of females indicates an improvement in the economic condition of the population.

In the provinces of Upper Austria, Salzburg, Styria, Carinthia, Krain, Görz-Gradisca, Istria, Tyrol, Moravia, Galicia, Bucovina and Dalmatia the largest proportion of gainful workers are engaged in agricultural pursuits; this class constitutes also a large proportion in Bohemia and Silesia. Manufacturing industries are most developed in Lower Austria, Vorarlberg, Trieste, Bohemia, and Silesia; 36.2 to 42.6 per cent. of all breadwinners in these provinces devote themselves to manufacturing.

The Austrian census of occupations provides also additional information concerning social classes, as such information is of great value. The following summary shows, for 1890 and 1900, the number of employers of labour and persons working on their own account, as well as the number of salaried officials, workmen, and members of the families of employers assisting in the business, and the percentage of increase or decrease during the decade:—

Social Classes.	1900.	1890.	Increase or Decrease per Cent.
Employers, &c. ....	4,310,676	3,812,640	+ 12.18
Salaried officials .....	444,751	353,721	+ 25.74
Wage earners .....	5,268,693	9,372,926	- 0.21
Relatives assisting employers ....	4,084,476		
Total .....	14,108,596	13,569,287	+ 3.97

In 1890 the relatives of employers assisting in business were not separately reported, but included in the class of wage earners.

The preceding figures show that nearly one-third of the breadwinners of this country belongs to the class of employers of labour or persons working on their own account. Their proportion is largest in the occupation class, official and professional service, smallest in manufactures. The workmen form the largest percentage of all persons in manufactures, while the proportion of salaried officials is largest in official and professional service; this social class is of comparative insignificance in agriculture.

The number and percentage of persons belonging to specified social classes is shown for each grand group of occupations and for the years 1890 and 1900 in the table below:—

Social Classes.	Agriculture.		Manufactures.	
	Number.	Per Cent.	Number.	Per Cent.
<b>1900.</b>				
Employers, &c. ....	2,164,582	26.4	598,429	18.9
Salaried officials .....	20,738	0.3	75,153	2.4
Wage earners .....	2,085,532	25.4	2,368,725	75.5
Relatives of employers assist- ing in business.....	3,934,722	47.9	101,493	3.2
<b>1890.</b>				
Employers, &c. ....	2,006,764	23.7	597,847	20.8
Salaried officials .....	22,432	0.3	39,316	1.4
Wage earners and relatives of employers assisting in business .....	6,440,027	76.0	2,243,734	77.8

Social Classes.	Trade and Commerce.		Official and Professional Service.	
	Number.	Per Cent.	Number.	Per Cent.
<b>1900.</b>				
Employers, &c. ....	368,580	35.6	1,184,085	68.6
Salaried officials .....	111,855	10.8	237,005	13.7
Wage earners .....	509,648	49.1	304,788	17.6
Relatives of employers assist- ing in business .....	46,400	4.5	1,861	0.1
<b>1890.</b>				
Employers, &c. ....	314,577	37.2	923,453	67.2
Salaried officials .....	106,343	12.6	185,630	13.5
Wage earners and relatives of employers assisting in business .....	424,153	50.2	265,012	19.3

The proportion of employers and persons working on their own account has decreased, except in agriculture, while a relative decrease of salaried officials appears in the occupation class, trade, and commerce. The wage earners (inclusive of relatives of employers assisting in business) decreased in agriculture, and in official and professional service.

It is of interest to know also the number and proportion of persons of each sex belonging to the different social classes; this is shown by the following figures:—



Social Classes.	Males.		Females.	
	Number.	Per Cent.	Number.	Per Cent.
<b>1900.</b>				
Employers, &c. ....	3,188,963	72·8	1,171,713	27·2
Salaried officials ....	376,846	84·7	67,905	15·3
Wage earners ....	3,678,035	69·8	1,590,658	30·2
Relatives of employers assist- ing in business..... }	1,064,249	26 1	3,020,227	73·9
<b>1890.</b>				
Employers, &c. ....	2,887,116	75·1	955,524	24·9
Salaried officials ....	311,203	88·0	42,518	12·0
Wage earners ....	4,550,282	48·5	4,822,644	51·5
Relatives of employers assist- ing in business.... }				

The largest proportion of male breadwinners are wage earners, while among the females the class of relatives of employers assisting in business is most prominent; persons of the latter sex form a higher percentage in 1900 than in 1890 in the classes employers, &c., and salaried officials.

The preceding tables show clearly the transformation of Austria from an agricultural to a manufacturing commonwealth.

The report on the occupation census contains also data concerning subsidiary occupations, the distribution of breadwinners and dependents according to age, conjugal condition, religion, language, &c., which will be of a high value for the student of social conditions.

### III.—*A Statistical View of the Workmen's Compensation Act Committee's Report.* By S. W. GLADWELL.

THE report of the Departmental Committee, appointed by the Home Secretary to inquire into the law relating to compensation for injuries to workmen, is of interest to members of the Society statistically, without any relation whatever to the complicated and intricate legal points raised before the Committee, or the contest between employers and workmen as to the benefits which should or should not be given to injured persons.

The Workmen's Compensation Act has now been in existence over six years, and the striking features of the experience is the relatively very small number of cases which appear in the various reports, compared with what is known to be a number many times in excess of that published. In the paper by Mr. William H. Tozer, which was read before the Society in April, dealing with the Five Years' Experience of the Registrar of Friendly Societies with

reference to schemes certified under the Workmen's Compensation Acts, 1897 and 1900, it was quite clear from the figures given that only the fringe of a great subject was touched. Only one Insurance Company, the Iron Trades Employers' Insurance Association, Limited, gives any figures of any practical value, and in Appendix 12, p. 201, of the report, it is there shown that the number of men insured with that Association is 248,000, with a premium income, according to their latest report, of 73,000*l.* This Company admits that although it covers a large proportion of the engineers and shipbuilders of the country, yet at the same time there are many great firms and a large number of small ones which, for various reasons, do not belong to the Association. The figures given by the Registrar of Friendly Societies compare in importance with the iron trades' figures in some respects rather unfavourably. It is well known, moreover, that since the Workmen's Compensation Act came into force, the income of many insurance companies has very considerably increased, it being calculated that not less than 2,000,000*l.* sterling is drawn in annual premium income from the employers of the United Kingdom, and, judging from the revenue accounts of the companies, it is quite evident that the premium income and the claims have only approximately balanced. A comparison, therefore, of these figures will endorse and emphasize the striking feature of the report, viz., the very small proportion of injuries and claims which become the subject of public returns, or returns that are voluntarily made public.

A reference to the annual statistics of proceedings under the Workmen's Compensation Act, published by the Home Office, is further evidence of the remarkable privacy with which claims are made, met and settled by employers and insurance companies with the workmen. During the five years ending 31st December, 1903, there came before the Courts, either by arbitration or by agreement, only 17,242 cases of over seven heads of employment, whereas one company alone dealt in that time with 22,000 claims, that number being spread over only one class of employment, and even then probably over a comparatively small portion of that class.

It is quite outside the province of this Society to discuss the expediency of Insurance Companies making public their figures in the same way as the above mentioned Association, but certainly, from the point of view of high polity, it would seem eminently desirable that every Company should be obliged to furnish returns in some form that might be settled after consultation between the Companies and the Government departments.

A further feature of the report, and one which is emphasized by the appendices, is the lack of finality of the figures, and a want, possibly excusable, of sound calculation. For instance, the cost of payment of compensation during the first fortnight in all cases varies, according to the evidence of the various individuals examined, from 25 per cent. to 75 per cent., and, further, there seems to be no comparison of rates for the different classes of insurance. Taking haphazard the first industry with which one meets in the lists, *e.g.*, agricultural implement makers, the rate quoted by Company A is

9s. per cent.; by Company B, 10s. per cent.; by Company C, 7s. 6d. per cent. It is alleged that there are many reasons for the difference in rates in one risk and another, although both may belong to the same class of work. Geographical area affects the cost by reason of the presence or absence of speculative solicitors, a lenient County Court Judge, a strong labour union, clean well-lighted shops and well-guarded machinery, benevolent and personal interest of the employer in the welfare of his workmen, the relative number of old men in the works to the number of young men employed, the rate of wages in one district as compared with another. It is further alleged that it is impossible to estimate scientifically the effect of each of these and other causes, but the Insurance Companies have, in their own parlance, to "smell" a rate. This is not, of course, scientific, but it is an interesting example of how statistics are affected by latent causes. It is easy to see that each of those above mentioned would have a very considerable cumulative effect on the cost of compensation to workmen. Given two works doing exactly the same weight of manufacture—one factory is very clean, well-lighted, possessing well-guarded machinery, with plenty of room between the machines, and all modern appliances; the other with works dark and gloomy, machinery out of date and unguarded—it will be easy to see that the cost of compensation in the former case would be very much lighter than the cost of compensation in the latter; but, on the other hand, the former employer has spent money *quâ* improvements, which the other employer is spending *quâ* compensation. If, however, one of the above works has, in addition, a sprinkling of speculative solicitors in its area, and a County Court Judge who is rather inclined to the weaker party, together with a strong labour union, it would undoubtedly be the fact that compensation in that case would be very much heavier than in the other, and so to that extent the true aspect of the case, as shown by the figures, would be seriously affected. When we, however, have figures like those above mentioned, as shown by the Iron Trades' Association, which is spread over such a large area, the probability is that those causes are, as regards one geographical area compared with another, neutralised, but the cumulative effect over the whole business still remains.

The great increase in the cost of compensation during the past five years is shown by every witness. Dealing first with the coal trade, the rate per 100*l.* of wages for compensation and incidental expenses has risen from 10s. 5*2* 17*d.* to 18s. 6*6* 8*d.*, or, approximately, an increase of 80 per cent. In the engineering and shipbuilding trades there has been a steady increase during the five years of 150 per cent., the cost per man per annum being in the first year 1s. 11½*d.*, and in the last year 4s. 11*d.* There seem to be no figures referring to any other large industry, and it is surprising that, considering the large interests at stake, employers did not do more in the production of actual facts before the Committee. Beyond two or three of the Colliery Owners' Mutual Associations, the Engineering and Shipbuilding Employers' Mutual Association, the

Registrar of Friendly Societies, and three private industrial firms or companies, there are no broadbased statistics outside those with which we are already acquainted under the Factory Acts, &c.

Reverting for a moment to the cost of compensation for the first fortnight, the Engineers' Association seem to have gone into the matter very elaborately. They seem to have obtained special information from certain selected firms employing in all about 350,000 men, but paying approximately 2,500,000*l.* per annum in wages. These firms apparently were asked to give a return of every accident that happened in their works, presumably during a recent year, dividing these into those involving less than fourteen days' absence, and those involving more than fourteen days' absence. The table shows a total over thirteen firms of 4,174 accidents, of which 65 per cent. involved less than fourteen days' absence. It would seem, according to the books of the Association, that over the whole of their firms, numbering nearly 700, their experience on the same basis showed that only 43 per cent. of accidents involved absence under fourteen days—this being probably due to the fact that employers, while taking a note for their own benefit of each accident as it occurred, did not think fit to report the same to their mutual Association. The Association assumes for the moment that the 65 per cent. would be a fair index for all their accidents, and they therefore arrive at an increase in the cost of compensation of 52½ per cent., without taking into account accidents unknown to the employer, or so slight as not to be taken note of, and the added incentive to malingering. It will be obvious that in heavy employments like coal mining, building, quarry work, heavy engineering and shipbuilding, the amount to be paid in respect of compensation would be light relative to the cost in the lighter forms of work. It is quite probable that the average duration of incapacity from work arising from accident in the case of men employed in, say, cotton spinning, would be very much less than the average duration of incapacity in the case of men employed in, say, coal mining. There would, in the former case, be consequently a greater number brought within the compensation area than in the latter industry, but there are no figures in any part of the report or appendices to show, even in a remote degree, what would be the increased cost in any particular industry from abroad made by the division of classes.

The Committee conclude their report with some observations on the desirability of more comprehensive and accurate records, which should be published for the benefit of the community in general. It is quite possible that the Insurance Companies from their standpoint do not view this suggestion with any pleasure, on the ground that it would be revealing, to a certain extent, trade secrets, but it would seem that figures in bulk might be very well given with some reasonable subdivision, and be a sufficient indication to the Government department, and to those accustomed to deal with statistics, of the truths which the figures might bring out.

IV.—*Agricultural Returns of Great Britain, 1904.* (1. *Acreage and Live Stock.* 2. *Produce of Crops.*)

FROM the memorandum prefixed to the tables of acreage and live stock issued last October, it appears that the total area under crops and grass in 1904 was 32,318,000 acres, or 26,000 acres less than in 1903. Of this total 15,220,000 acres were in arable cultivation, being a decline during the year of 196,000 acres. The wheat area in 1904, 1,375,000 acres, was the smallest ever recorded, the previous minimum being 1,417,000 acres in 1895, subsequent to which, however, there was a recovery to 2,102,000 acres in 1898. The recent decline is therefore the more noteworthy; although during the last two years it may be largely attributed to the unfavourable conditions of the sowing time. The barley area also reached its minimum in 1904, showing a decrease of 17,800 acres from the previous year. On the other hand, the area under oats was extended by 113,000 acres. This crop, which has long been the most widely cultivated cereal in Great Britain, now occupies for the first time a larger area than wheat and barley together. The area under potatoes was 570,000 acres, or 6,000 more than in 1903, the increase being practically confined to Scotland. Turnips and swedes showed a small increase for the first time since 1893, but the local changes were very diverse; this was also the case with mangolds, in which crop, however, there was a net decline of 2,800 acres. A decline of 136,000 acres appeared in the area under clover and rotation grasses; the most important reductions being in Suffolk and Lincoln, while in Scotland the decrease was relatively small. Permanent grass increased by 163,300 acres, the total for Great Britain now exceeding 17,000,000 acres, of which about one quarter was mown for hay this year. As regards live stock: The total number of horses included in the returns was the largest hitherto recorded, and was 23,000 more than in 1903. The number of cattle was greater than in any year since 1892, while an increase of 90,000 in the cows and heifers brought the total of this class of stock up to 2,679,000, a number never previously equalled. Sheep continue to decline, the diminution this year being 433,000 head; the most important decreases occur in the north of England. An increase of 175,000 pigs is noteworthy.

The preliminary statement of the produce of crops, issued on 24th November, summarises the results of the harvest in 1904: Of the cereals, wheat and barley came out badly, being respectively 4 bushels and 2 bushels per acre below the average of the preceding ten years; the total produce in each case was the smallest on record. Oats were an average crop. Beans gave the poorest result of the year, being 5 bushels per acre below average, and peas were also slightly under average. Potatoes yielded a good crop, quantitatively, the average for the whole country being over 6 tons per acre. Roots also showed over average results, particularly turnips. Hay, though not quite so heavy as in 1903, was still above the average by 1 cwt. per acre. Hops were a smaller crop than in any year except 1888.

*Agricultural Returns of the United Kingdom for 1904. Acreage under Crops and Grass; and 4th June, 1903, in each Division of Great Britain; with*

	England.		Wales.		Scotland.	
	1901.	1903.	1904.	1903.	1904.	1903.
	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.
Total area of land and water <sup>c</sup> .....	32,551,808	32,551,808	4,777,133	4,777,133	19,458,728	19,458,728
Total acreage under crops and grass <sup>d</sup> .....	24,630,092	24,651,179	2,798,880	2,800,401	4,888,638	4,891,799
<b>Corn Crops—</b>						
Wheat .....	1,302,104	1,497,254	55,144	43,197	37,736	41,136
Barley or bere .....	1,543,579	1,546,354	96,341	99,080	200,764	214,050
Oats .....	2,059,983	1,953,866	212,310	213,266	980,739	973,110
Rye .....	49,418	53,480	1,328	1,380	5,078	5,224
Beans .....	240,645	226,750	1,235	1,292	10,902	11,613
Pears .....	173,793	179,456	917	1,059	898	994
Total .....	5,369,862	5,455,142	347,105	359,274	1,236,067	1,246,127
<b>Green Crops—</b>						
Potatoes .....	402,760	402,725	29,714	30,197	137,735	131,264
Turnips and swedes .....	1,091,344	1,085,339	61,089	61,038	451,721	456,924
Mangold .....	383,616	388,063	10,212	10,259	2,969	3,305
Cabbage, kohlrabi, and rape .....	159,084	162,714	4,189	4,474	11,709	15,917
Vetches or tares .....	118,480	135,819	877	955	8,872	8,193
Other crops .....	152,700	163,440	1,390	1,349	2,581	2,501
Total .....	2,310,018	2,338,099	107,421	108,272	618,537	618,203
<b>Clover, sainfoin, and grasses under rotation—</b>						
For hay .....	1,698,490	1,797,075	203,039	203,423	421,866	411,947
Not for hay .....	1,019,778	1,025,004	159,431	182,593	1,169,391	1,187,761
Total .....	2,718,268	2,822,079	362,470	386,016	1,590,757	1,599,731
<b>Permanent pasture or grass not broken up in rotation—<sup>d</sup></b>						
For hay .....	4,116,835	4,122,881	502,756	487,110	145,792	144,976
Not for hay .....	9,576,580	9,458,291	1,471,711	1,451,734	1,284,362	1,269,507
Total .....	13,693,415	13,581,178	1,974,467	1,938,834	1,430,174	1,414,483
<b>Flax .....</b>	551	916	3	4	9	5
<b>Hops .....</b>	47,799	47,938	—	—	—	—
<b>Small fruit .....</b>	70,612	68,968	1,633	1,330	6,072	5,954
<b>Bare fallow .....</b>	419,567	337,059	6,151	6,771	6,972	7,296
<b>Horses used for agricultural purposes<sup>e</sup> .....</b>	No. 869,618	No. 856,569	No. 94,353	No. 94,337	No. 156,277	No. 155,642
Unbroken horses—						
1 year and above .....	224,969	224,525	42,416	41,173	33,936	31,423
Under 1 year .....	101,355	98,266	23,161	21,854	13,799	13,465
Total of horses .....	1,195,942	1,179,360	160,262	157,264	204,032	200,530
<b>Cows and heifers in milk or in calf .....</b>	1,961,860	1,876,318	277,462	274,472	439,356	437,418
<b>Other cattle—</b>						
2 years and above .....	1,034,419	1,078,241	83,931	86,567	256,286	275,817
1 year and under 2 .....	968,464	907,607	176,849	163,934	264,530	294,531
Under 1 year .....	952,480	894,082	190,193	186,067	232,531	237,480
Total of cattle .....	4,917,232	4,746,368	728,435	711,064	1,212,685	1,247,246
<b>Ewes kept for breeding .....</b>	5,570,760	5,541,950	1,415,284	1,400,496	2,591,864	2,936,653
<b>Other sheep—</b>						
1 year and above .....	3,070,994	3,148,416	898,190	829,275	1,414,418	1,482,198
Under 1 year .....	6,107,208	6,210,612	1,246,211	1,281,653	2,659,249	2,806,542
Total of sheep .....	14,748,962	14,900,978	3,489,685	3,511,424	6,968,531	7,227,395
<b>Sows kept for breeding .....</b>	327,904	332,735	36,621	39,404	17,531	17,761
<b>Other pigs .....</b>	2,148,451	1,973,072	204,483	204,579	126,654	119,010
Total of pigs .....	2,476,355	2,305,807	241,104	243,983	144,185	136,771

<sup>a</sup> Furnished by the Department of Agriculture and Technical Instruction for Ireland. The figures for Live Stock are subject to revision.

<sup>b</sup> The figures for 1904 are subject to revision.

*and Number of Horses, Cattle, Sheep, and Pigs; as returned upon the 4th June, 1904, Particulars for Ireland, and Total for the United Kingdom.*

Great Britain.		Ireland. <sup>a</sup>		United Kingdom, including Isle of Man and Channel Islands.		
1904.	1903.	1904.	1903.	1904. <sup>b</sup>	1903.	
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
56,787,669	56,787,669	20,710,589	20,710,589	77,684,012	77,684,012	Total area of land and water <sup>c</sup>
32,317,610	32,313,579	15,230,124	15,242,421	47,670,948	47,708,033	Total acreage under crops and grass <sup>d</sup>
1,375,284	1,581,587	30,825	37,596	1,407,618	1,620,988	Corn Crops—
1,840,684	1,868,484	158,108	158,791	2,006,454	2,081,823	Wheat
3,222,962	3,140,342	1,078,772	1,087,588	4,351,183	4,257,062	Barley or bere
55,714	59,084	9,414	10,050	65,177	69,328	Oats
282,782	239,655	1,890	2,110	251,892	241,958	Rye
175,608	181,511	185	290	176,984	181,951	Beans
6,953,034	7,060,543	1,279,189	1,306,315	8,257,658	8,393,000	Peas
570,909	564,286	618,540	620,393	1,300,419	1,196,877	Total
1,604,104	1,603,301	288,831	287,548	1,896,010	1,898,879	Green Crops—
298,837	401,627	78,746	75,198	476,313	478,394	Potatoes
177,986	183,104	43,146	48,117	221,478	231,743	Turnips and swedes
128,929	144,966	2,761	2,682	131,378	147,967	Mangold
156,671	167,390	21,459	24,865	182,832	194,986	Cabbage, kohlrabi, and rape
3,036,026	3,064,574	1,050,413	1,059,783	4,109,345	4,146,845	Vetches or tares
2,332,895	2,412,445	631,748	627,259	2,968,462	3,053,638	Other crops
2,346,800	2,395,381	647,416	608,776	3,028,616	3,037,564	Total
4,671,495	4,807,826	1,279,164	1,236,035	5,997,078	6,091,222	Clover, sainfoin, and grasses under rotation—
4,765,403	4,764,970	1,628,412	1,596,906	6,400,510	6,358,319	For hay
12,332,663	12,179,525	9,939,223	9,988,945	22,292,796	22,187,124	Not for hay
17,093,056	16,934,495	11,567,635	11,585,851	28,693,305	28,545,443	Total
563	925	44,293	44,685	44,856	45,610	Permanent pasture or grass not broken up in rotation— <sup>d</sup>
47,799	47,988	—	—	47,799	47,938	For hay
77,947	76,152	4,512	4,591	82,960	81,260	Not for hay
432,690	351,126	4,818	5,131	437,927	356,716	Total
No.	No.	No.	No.	No.	No.	Flax
1,120,247	1,106,448	369,785	364,639	1,497,274	1,477,991	Hops
301,371	297,121	93,498	69,327	396,288	387,617	Small fruit
138,618	133,585	68,980	69,856	208,271	204,136	Bare fallow
1,560,236	1,537,154	532,263	523,812	1,101,833	2,069,944	Horses used for agricultural purposes <sup>e</sup>
2,678,650	2,688,208	1,497,819	1,495,179	4,193,893	4,100,480	Unbroken horses—
1,374,636	1,430,625	1,026,665	1,032,178	2,405,979	2,467,770	1 year and above
1,429,933	1,368,136	1,036,505	1,086,953	2,474,431	2,113,307	Under 1 year
1,375,208	1,317,649	1,117,143	1,100,502	2,501,659	2,426,947	Total of horses
6,953,332	6,704,618	4,677,132	4,664,112	11,575,965	11,408,504	Cows and heifers in milk or in calf
9,880,908	9,879,101	1,524,803	1,576,179	11,435,887	11,485,123	Other cattle—
5,813,602	5,459,889	722,565	729,501	6,040,674	6,197,158	2 years and above
10,012,668	10,300,807	1,560,516	1,638,924	11,628,513	11,978,382	1 year and under 2
25,207,178	25,639,797	3,817,884	3,944,604	29,105,074	29,658,863	Under 1 year
352,056	389,900	138,541	147,807	517,621	540,008	Total of cattle
2,479,588	2,296,661	1,181,982	1,235,709	3,674,471	3,545,905	Ewes kept for breeding
2,861,644	2,686,561	1,315,523	1,343,516	4,192,092	4,085,808	Other sheep—
						1 year and above
						Under 1 year
						Total of sheep
						Sows kept for breeding
						Other pigs
						Total of pigs

<sup>a</sup> Not including foreshore and tidal water.

<sup>b</sup> Not including mountains and heath land.

<sup>c</sup> Including mares kept for breeding.

*Produce of Crops. Preliminary Statement showing the Estimated Total Produce and Yield per Acre of the Principal Crops in Great Britain in the Year 1904, with Comparisons for 1903, and the Average Yield per Acre of the Ten Years 1894-1903.*

## WHEAT.

	Estimated Total Produce.		Acreage.		Average Estimated Yield per Acre.		Average of the Ten Years 1894-1903.
	1904.	1903.	1904.	1903.	1904.	1903.	
	Bushels.	Bushels.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
England .....	34,535,807	45,102,329	1,802,404	1,497,254	26'52	30'12	30'95
Wales .....	890,800	1,059,229	35,062	43,072	25'41	24'59	24'59
Scotland .....	1,453,549	1,481,258	37,722	41,181	38'53	36'01	37'58
Great Britain.	36,880,246	47,642,816	1,375,188	1,581,457	26'82	30'13	30'95

## BARLEY.

England .....	47,028,421	49,081,389	1,513,579	1,545,354	30'47	31'76	33'00
Wales .....	2,983,409	2,890,174	96,841	99,060	30'97	29'17	30'13
Scotland .....	7,181,237	7,502,478	200,764	214,050	35'77	35'05	35'77
Great Britain.	57,193,067	59,474,041	1,840,684	1,858,484	31'07	32'00	33'17

## OATS.

England .....	84,078,623	82,790,458	2,059,961	1,953,866	40'82	42'37	41'09
Wales .....	7,426,363	6,623,032	212,240	213,266	34'99	31'06	33'25
Scotland .....	35,902,862	35,267,698	980,789	973,110	36'61	36'24	36'50
Great Britain.	127,407,848	124,681,188	3,252,940	3,140,242	39'17	36'70	39'06

## BEANS.

England .....	5,435,245	7,063,775	240,359	226,439	22'61	31'20	28'02
Wales .....	29,851	38,238	1,230	1,272	24'47	30'06	24'41
Scotland .....	363,079	343,317	10,515	11,151	34'53	31'24	32'68
Great Britain.	5,828,175	7,450,330	252,104	238,861	23'12	31'19	28'25

## PEAS.

England .....	4,447,763	4,768,885	172,502	179,122	25'78	26'60	26'35
Wales .....	19,728	21,320	913	1,052	21'61	20'27	19'79
Scotland .....	15,375	17,918	575	684	26'74	26'20	25'38
Great Britain.	4,482,866	4,803,123	173,990	180,858	25'77	26'56	26'29

## POTATOES.

England .....	Tons.	Tons.	Acres.	Acres.	Tons.	Tons.	Tons.
Wales .....	2,462,613	2,041,023	402,760	402,725	6'11	5'07	5'80
Scotland .....	143,964	131,846	29,714	30,197	4'84	4'37	5'43
Scotland .....	981,677	740,844	137,735	131,364	7'13	5'64	5'67
Great Britain.	3,588,254	2,913,713	570,209	564,286	6'29	5'16	5'75



*Produce of Crops. Preliminary Statement for Great Britain for 1904—Contd.***TURNIPS AND SWEDES.**

	Estimated Total Produce.		Acreage.		Average Estimated Yield per Acre.		Average of the
	1904.	1903.	1904.	1903.	1904.	1903.	Ten Years 1891-1903.
	Tons.	Tons.	Acres.	Acres.	Tons.	Tons.	Tons.
England .....	14,240,944	12,996,608	1,091,344	1,035,339	13·05	11·97	11·96
Wales .....	1,000,805	878,684	61,039	61,038	16·40	14·31	14·74
Scotland .....	7,794,380	6,057,168	451,721	456,924	17·25	13·26	14·69
Great Britain.	23,036,129	19,927,460	1,604,104	1,603,301	14·36	12·43	12·79

**MANGOLD.**

England .....	7,252,440	6,933,763	385,646	388,063	18·81	18·00	18·36
Wales .....	180,615	154,937	10,212	10,259	17·69	15·10	16·12
Scotland .....	48,847	49,055	2,969	3,305	16·28	14·84	17·10
Great Britain.	7,481,402	7,187,755	398,827	401,627	18·76	17·90	18·30

**HAY FROM CLOVER, SAINFOIN, &c.**

	Cwts.	Cwts.	Acres.	Acres.	Cwts.	Cwts.	Cwts.
England .....	50,851,945	56,941,209	1,693,490	1,797,075	29·94	31·69	29·03
Wales .....	5,052,234	4,567,076	203,039	203,423	24·83	22·45	24·08
Scotland .....	14,037,089	11,921,099	421,366	411,947	33·31	28·94	31·88
Great Britain.	69,941,268	73,429,384	2,322,895	2,412,445	30·11	30·44	29·13

**HAY FROM PERMANENT GRASS.**

England .....	102,806,640	109,007,844	4,116,855	4,122,884	24·97	26·44	24·05
Wales .....	10,224,964	8,662,669	502,756	487,110	20·34	17·78	18·58
Scotland .....	4,482,312	3,961,549	144,939	144,281	30·93	27·46	28·87
Great Britain.	117,513,916	121,632,062	4,764,550	4,754,275	24·66	25·58	23·63

*Note.*—The preliminary statement of the produce of hops for 1904, issued on the 7th October, showed a total estimated produce of 282,330 cwts., being an estimated yield per acre of 5·91 cwts.

## V.—Notes on Economic and Statistical Works.

*Economic Inquiries and Studies.* By Sir Robert Giffen, K.C.B. In two volumes, 8vo. Vol. i, xii + 455 pp.; vol. ii, vi + 461 pp. London: George Bell and Sons, 1904. Price 21s. net.

These two volumes of collected studies hardly stand in need of formal recommendation to the readers of this *Journal*. They represent the life-work of a distinguished member of the Society, if for a moment we dismiss from our consideration the service which for many years he rendered as a civil servant to the State. They are a varied typical collection of the writings of one of the ablest and best-known of living statistical authorities. As such they would be certain of a cordial grateful welcome from statisticians in this country and wherever else statistical study is conscientiously pursued. It is no long time since Sir Robert Giffen's *Essays in Finance*, from which a large portion of the present volumes has been reproduced, occupied, not only a distinctive, but even an unique, position in English economic literature; for they were practically the only writings in the English language approaching any adequate treatment of the subject, and exhibiting, by accident it might be more than by design, some amount of systematic exposition, to which our economic teachers could send their pupils for instruction in statistical method and technique. They were not of course intended by their author to be a text-book in statistics, but in its absence they fulfilled many of the functions to which a text-book written for the purpose could aspire. Of that prerogative they have been deprived by the recent publication of Mr. Bowley's manual, and the appearance of that book has redeemed English economics and statistics from a reproach which was previously not undeserved. But we imagine that the author of the volumes now before us would be the foremost to rejoice that a growing demand for methodical instruction should have furnished the occasion for the preparation and the issue of that text-book. For that demand indeed he himself is in no small degree responsible. He has stimulated an eager appetite for statistical information. He has exposed completely not a few of the most common statistical mistakes. He has supplied a model of the way in which exact statistical knowledge should be imparted.

For this reason we feel some regret that these two volumes should not have been described as "Statistical Studies and Inquiries." For we are jealous for the honour which would thus, we think, have been rendered to Statistics, and for the larger emphasis which would have been bestowed on the author's services to that particular branch of learning. The essays seem to us, in the great majority of cases, to be concerned more closely with statistical reasoning and observation than with economic study or speculation. And even when they are designed, as in some instances, to illustrate the aid which statistics, handled skilfully, can give to the elucidation or solution of vexed problems of practical economics, it is the special statistical rather than the general economic considerations

which are assigned, rightly as it appears to us, the greater prominence. As a training in the actual practice of statistical inquiry these collected writings of an expert veteran seem to us, as we have read them once again, to have lost little or none of their old importance, although English students can now commence their studies with a systematic text-book written in the English language. They would still, with great advantage, as we think, supplement their early reading by the subsequent perusal of Sir Robert Giffen's *Essays*. For they would there observe the statistician actually at work. They would watch him compassing with ease the arduous enterprise of wresting from unwilling facts the information which they obstinately withhold. They would note with envy, and would surely strive to emulate, the masterly assurance with which a trained quantitative sense is here effectively employed in the accurate interpretation of uncertain evidence.

Even when Sir Robert Giffen is engaged on questions like the expense of the Franco-German war, the interest of which has to some extent evaporated from the public mind during the generation which has come and gone since the paper was compiled, its scientific value, as an exercise in method and technique, is unimpaired. Taught by this example, the student may apply the lesson he has learnt to the examination of a later campaign, in which his own country was concerned; and the same expert guidance is to some extent available for his assistance, for an essay in the second volume deals with "Some Economic Aspects of the South African War." Nor indeed can we imagine that amid the great variety of subjects to which, in the papers now reprinted in these volumes, Sir Robert Giffen has during the last thirty years or so applied his remarkable statistical dexterity, any student could fail to find a pattern of the way in which he should address himself to business when he wishes to investigate statistically some topic in which he is interested. As we run our eyes along the titles of the thirty-one essays reproduced, we note with grateful admiration the number and importance of the discussions of our time in which the author has engaged. Nor has he intervened without producing a distinct inclination in the course, and, at any rate in many cases, in the final outcome of these conspicuous debates. For he has for many years enjoyed an influence rarely wielded by statisticians in this or any other country; he has known how to reach the ear of ordinary folk. He has possessed in a remarkable degree what we may call the journalistic instinct of presenting his material in an attractive and intelligible form.

This enviable gift of facile exposition has, no doubt, its dangers. Sir Robert Giffen may not always have been able to resist its subtle powerful temptations. Those unlucky persons who from time to time may have found themselves compelled by a hard destiny to take the contrary side to him in some prolonged and spirited debate, may perhaps have thought him an unsparing controversialist. They may even have suspected that he sometimes started with so unhesitating a conviction of the necessary triumph of his cause, that he would not or he could not see the merits of the case which might be put together by his opponents. They may

therefore be disposed to consider it a hard perplexing saying on the lips of so persuasive and adroit a reasoner, who has seemed to them at least to take an unconcealed joy in controversial argument, that he has cherished in the essays printed in these volumes the disinterested academic aim of avoiding controversy. And yet, on reflection, they might find some consolation in the thought that in one controversy of recent times, from which intense heat was not absent, the advocates of a view opposed to that adopted by Sir Robert Giffen discovered in his writings, some of which in fact are represented in the volumes now before us, the statistical presentation of the data on which they were willing to rely for a large portion of their argument for the reforms which he resisted. We allude to the essay on the "Fall of Prices of Commodities in 1873-79." Similarly, it may be that a fiscal reformer of the present day might draw the like encouragement for his heretical belief from the more recent Essay on "A Financial Retrospect, 1861-1901." And yet in honesty he must admit that Sir Robert has never attempted to conceal his thorough-going faith in the theoretical orthodoxy and the practical expediency alike of Free Trade. Not a few of the most notable of the essays in these volumes are devoted to the refutation of protectionist contentions and mistakes. To Sir Robert Giffen the revelation of the magnitude, or perhaps of the existence, of "invisible exports" is chiefly due; and arguments based on his established facts have been conspicuous in the controversial armoury of subsequent Free Traders. From such comparisons as these, however, the impartial student, who presumably is anxious only to attain and to announce the truth, may draw with justification a conclusion which is complimentary to Sir Robert's candour as a statistician.

There is one other reason for which the readers of this *Journal* may feel a peculiar pride in the contents of these volumes. Six of the essays have appeared already in these pages. They were read originally as papers at the meetings of the Royal Statistical Society, and two of the six were delivered as addresses from the Presidential Chair. Of these six papers the address on the "Progress of the Working Classes in the last Half Century" attracted perhaps as much attention from the general public as any utterance of Sir Robert Giffen; and it illustrates in a conspicuous degree his power of interesting uninstructed laymen in a statistical discussion. A second essay on the "Use of Import and Export Statistics" affords no less remarkable an example of the quality of these papers as models of statistical method and technique; and it may now be finally pronounced to have taken an enduring place as a classic in the statistical literature of the nineteenth century. A third essay on "The Utility of Common Statistics" demonstrates beyond possibility of dispute the ease with which so competent a master of his subject can extract from dry numerical material the succulent pith of significant fact contained. But, although these three essays may be rightly chosen as representative samples illustrating the most obvious characteristics of the author, there are few, if there are any, of the papers reprinted in these volumes from which the statistical

student may not derive inspiring instruction, and the general reader may not gather useful information. A censorious critic might perhaps affirm that a few among the many which deal with passing controversies in a controversial mood might have been omitted without serious loss; but even he would recognise that the advantage gained by their omission would consist in the discovery of sufficient room for the reproduction of older papers from the "Essays in Finance" which Sir Robert has not here reprinted. We might for instance have been glad to have obtained in exchange for a "Note on the Gresham Law," or the paper on "Fancy Monetary Standards," the "Further Notes on the Progress of the Working Classes." Possessors of the earlier volumes, long since out of print, might also have been grateful to the publishers had they confined the first of the new volumes to the reproduction of the earlier essays, and left the second for the publication of the new material taken from the various Journals to which the author has subsequently contributed. For it should perhaps be noted that, with the exception of the final essay on "The Present Economic Conditions and Outlook for the United Kingdom," which is not the least characteristic paper in the book, all the essays have been published in some other place before they have been collected here. In their collected form, however, we are more easily enabled to appreciate their total value; and the objections we have noted are of small importance, compared with the rich and welcome opportunity now presented for the connected study of a representative selection of the writings of an author of whose ability and influence every statistician must feel proud, and especially the members of that Society of which he has for many years been a distinguished ornament. To the zealous service he has rendered to its advancement the publication of the volumes now before us is a notable addition.

L.L.P.

*The Rise and Decline of the Free Trade Movement.* By W. Cunningham, D.D., F.B.A. x + 168 pp., 8vo. London: C. J. Clay and Sons, 1904. Price 2s. 6d. net.

All who are interested in the historical aspect of Free Trade problems, whether they agree or not with his conclusions, will owe a debt of gratitude to Dr. Cunningham for his careful, luminous, and concise statement of the influences that made for Free Trade in the second and third quarters of last century, and of those which produced the re-action of more recent years. The period from Burleigh to 1815 is treated as a consistent whole, during which one, at least, of the main objects of statesmen was to obtain command of the seas for the purposes of commerce, as well as war; and Dr. Cunningham holds that the methods were justified by their success. The end of this period was "characterized by great enterprise and rapid progress" (p. 32), through or because of the system of high protection, but "the result on the welfare of the community, in the earlier part of the nineteenth century, was deplorable. The condition of the labouring classes, both in town and country, was miserable in the extreme" (p. 37). The time had arrived for a change.

Great Britain in 1820 "had a monopoly of mechanical production," and "there was no immediate prospect that this monopoly would be broken down" (pp. 44 and 45). "The one thing that seemed necessary for the unlimited development of English trade and industry was that hindrances should be removed, so that we might be able to crush rival industries in every part of the world, by supplying the markets with goods produced on the better and cheaper methods which were only practised in England" (p. 45). The occasions of the successive steps in this freeing of commerce are carefully sketched, with many references to authorities. The results of this and contributory causes is thus stated: "When the country was viewed in its social aspects [*circa* 1871], it was also clear that things were going well, according to the test that the Mercantile System had most conspicuously failed to satisfy. The welfare of the working classes of the community had become much more assured; the skilled artisans had risen out of the desperate straits to which so many of them had been reduced, and the agricultural and unskilled labourers were participating in the advantages of higher wages and better conditions of life" (p. 72). But from this date there was a wide-spread re-action on the continent, and by 1880 "the whole question was set in a new light; the prospects of cosmopolitan commercial intercourse were changed" (p. 92). The home conditions of 1846 were gone; Great Britain had no longer any monopoly of mechanical production. The old premisses were no longer true, the logical support of Free Trade had to be reconstructed. The Mercantile System had been condemned as out of date after 1820; should the Free Trade system have been similarly condemned in 1880?

Opinion is so much divided as to the teaching of recent history, that there is much risk of misinterpreting Dr. Cunningham's reasoning in answer to this question. The line he takes is, put very briefly, that our system of Free Trade has been one-sided, in that it deliberately ignores the interests of agriculture, which has an importance of a special kind in national policy; that our national resources, whether of men or natural capital (land and mines), are deteriorating, and that other nations are becoming stronger competitors in the sphere of industry to which we are deliberately devoting our policy. In his analysis the change in the value of gold seems to be ignored; if we re-write the statistics used with the help of Sauerbeck's index-numbers, the apparent slackening of progress in manufactured exports assumes a very different appearance, and the value of the produce of land no longer shows a very rapid falling off, so far as the gross value assessed by the Income Tax Commissioners is concerned. In the same way the alleged decreased capital value of land (800,000,000*l.* between 1883-1903, as quoted from Mr. Palgrave) needs some amendment: the capital value if reckoned in silver, for example, would show a rise. We do not intend to deny the dwindling and disappearance of agricultural capital (in Mr. Palgrave's phrase); but capital does dwindle and disappear if not constantly renewed, and much of the apparent decrease is due to the accident that during the twenty years in

question the standard by which it is measured has appreciated (20 per cent. by Sauerbeck's numbers) relatively to commodities. The whole book should indeed be read with a diagram of index-numbers open by its side. Again, it is surely an open question whether agriculture should be regarded as in a kind of opposition to other national interests. Is not the great and increasing mass of fixed capital employed in directly satisfying other prime wants (clothing, shelter, and so on) of the population on nearly the same footing as the capital value of land, most of which is after all due to human industry?

Dr. Cunningham holds that Free Trade, as understood in 1846-71, has done its work, and that as the Mercantile System was discarded when it was no longer suitable to more modern conditions, so now we should consider whether there is no better policy for our times. In brief, he advocates a new organisation "built up by the co-operation of free peoples," a policy which recognises the solidarity of interests of the various parts of the British Empire, and its economic organisation. The reader of this book will, whatever his views, be more inclined to receive any proposition with an open mind, than one who has not studied our trade policy in its historical relations; but Dr. Cunningham does not commit himself to any definite suggestions, and we may be excused from professing agreement or disagreement with such a pleasant-sounding programme, till the lines on which it is proposed to carry it out are a little more distinct.

A.L.B.

*Industrial Organisation in the Sixteenth and Seventeenth Centuries.*

By George Unwin. vii + 277 pp., 8vo. Oxford: The Clarendon Press, 1904. Price 7s. 6d. net.

In this book Mr. Unwin has made an important contribution to the fuller knowledge of some economic changes which had hitherto been wrapped, as it seemed, in impenetrable obscurity. As he remarks in his Preface, he has done something to "bridge over the gap which appeared to exist in industrial history between mediæval England and the England of the eighteenth century." He has elucidated the indistinct connections, previously imagined rather than established, between the rise of the trade union and the decay of the craft organisation; and he has made it probable that the resemblances between the older and the later forms of association are not so destitute of a substratum of actual demonstratable fact as historians, impressed by their conspicuous differences and by the absence of direct descent, have been accustomed to assume. He has traced with exhaustive pains the many different processes by which the craft guild was transformed into the Livery Company, and he has shown that conditions were finally produced among which it was naturally to be expected that an organisation like trade unions should arise.

His addition to our economic history is, we think, no less original in its conception than it is happy in its execution. Not merely does it throw fresh light on dark or hidden corners of past history; not only does it enable accurate distinctions to be drawn between

different stages of development or decay hitherto confounded in some ambitious but illusive generalisation as vague as it was comprehensive; but the achievement of this satisfactory result is largely due to the novel character of the investigation. For Mr. Unwin has sought his information from sources previously untapped. He has shown what a wealth of fresh material awaits the competent and persevering worker in regions which have up till now been almost, if not wholly, virgin soil. He has examined carefully the records, or some portion of the records, of two important Livery Companies of London; and the rich harvest he has gleaned from this limited area may, we hope, encourage others to follow his example, should he himself be unable to carry further his researches. The abandonment of exploration on the path which he has opened would now be little less than a calamity; and that this book may prove to be a first instalment of an even more elaborate undertaking will, we are confident, be the conclusion with which most readers will rise from its perusal. For, interesting and informing as are the results which Mr. Unwin has already reached, his investigations are in some particulars at least necessarily incomplete. On certain points he is compelled to put forward hints in place of ample demonstration; and in some respects his narrative is an unfinished sketch.

It would no doubt be difficult to arrange the varied evidence he has gathered and presented in the earlier chapters of his history in such plain and easy order that he who runs may read; but nevertheless we think it not impossible that some rearrangement of material might help the student, who was not unwilling to take pains, to grasp more firmly the exact minute distinctions drawn, and to form a more defined and permanent conception of the successive sequence in the process by which the earlier craft guilds were transformed into the later Livery Companies. Prolonged use of his apparatus of inquiry, and further familiarity with his store of facts, might enable Mr. Unwin to remove all trace of the impression which some portions in the opening chapters of his book have produced upon us. For at times he seems here to be overweighted by his material. By contrast, in the later stages of development, which he distinguishes, he avowedly confines investigation to the more limited sphere of the records of the Livery Companies of London, and abandons the comparative method previously pursued. He no longer tries to test the evidence of London by that of other English towns, or by the experience of Continental cities such as Paris. The large use made of the new material furnished by the records of the London Livery Companies is, we have already noticed, the most novel characteristic of his book. It was indeed the origin of his whole work; and here the burden of material seems to be less overwhelming. But, on the other hand, the treatment of the subject necessarily becomes less comprehensive, and by comparison perhaps is in places almost superficial. Some of the chapters appear more like an afterthought than like an integral portion of a total plan. We would add that we think that Mr. Unwin in one chapter has yielded too readily to the temptation to view the



history of the past in the light of its reference to the controversies of the present; and that the discussion of Protectionism under James I, suggestive as it is, and forcible as are many of Mr. Unwin's commentaries and criticisms, should either have been omitted as not strictly relevant to the immediate purpose or main subject of his book, or should have been treated with more fulness than is possible in the few pages given here to its investigation.

But, if this be an imperfection, it is of a minor and a venial character; and, with this possible exception, Mr. Unwin appears to us to have approached his subject with genuine historical impartiality and zeal. He exhibits in no common measure that capacity for spending unlimited pains on the patient exploration of the actual facts which is the attribute of all historians worthy of the name. And he has earned the great reward of making, as we have remarked, a notable addition to our knowledge of industrial history. Under his trustworthy guidance we are enabled to observe and separate the various modes and stages in which the influence of capital and the power of capitalists developed steadily but surely in days before the period generally described as that of capitalistic industry. We can see, for instance, how the position of the trader was improved and that of the craftsman deteriorated, whether this transformation took the form, firstly, of concentration of trading functions in one of a group of allied crafts, which gained control of the other crafts with which it was connected, or, secondly, of differentiation within the boundaries of a single craft, leading to the dominion of merchants over handicraftsmen, who were once on an equality of membership, or, lastly, of the absorption of the organisation of the handicrafts by trading organisations which had arisen separately outside, and obtained a directing and preponderating influence. These diverse changes, which are distinguished carefully by Mr. Unwin, correspond, in the period of their occurrence, to the fourteenth, fifteenth and sixteenth centuries. They accomplished by their total force the transformation of the craft-guild into the livery company.

Nor is Mr. Unwin less informing on particular questions which have been the subject of considerable dispute. We observe, for example, how in the weavers' trade craftsmen were never of great importance, for the development of trade preceded the development of the craft. Here, accordingly, capitalism may be discovered at an early date, and its appearance affords some explanation of the peculiar differences noted by previous historians between the history of this trade and the general history of English industry. Similarly, Mr. Unwin throws fresh illumination on the dubious nature of those yeomen-companies and those journeymen-fraternities which have perplexed many previous writers. He suggests that the yeomen-companies consisted finally of small masters, who were at first emancipated journeymen. They were outside the old close guilds, but were, nevertheless, linked by some connection to them. Again, he shows that at a later time the struggle, sometimes represented as occurring between capital and labour, was really waged between two kinds of capital, commercial and industrial.

For capital in its development took different lines. There were dealers in foreign wares, there were traders over the sea, and there were also industrial *entrepreneurs* or middlemen. Different interests clashed with one another, both within and outside the guilds. Trading capital gradually gave way before industrial capital. A conflict was also carried on between small masters and merchant employers, which to some extent coincided with the struggle between two kinds of capital; and the small masters were for a time supported by the Crown for fiscal purposes. But in the end, the small master was superseded in industry, as well as commerce, by the large employer. The factory finally completed his discomfiture.

In these and other ways, which we have not space to notice here, Mr. Unwin distinguishes what was before confounded, and elucidates what was previously obscure. Perhaps, however, we may, in conclusion, recommend especially all his readers to study carefully the genealogical tree contained in his Introduction. For that tree indicates clearly the many various lines of descent, which can be traced, starting with the craftsman, who combined several functions in his single person, and then parting into the separate divisions of master and servant, of trader and craftsman, and of commercial and industrial capitalist, until the final combination is attained of the steel trust of modern times. In this pedigree the mediæval guild, the fifteenth century Livery company, the Elizabethan company, and the Stuart corporation represent successive stages of association on the way to the trade union and the trust. This genealogical tree is, in fact, a compendium of the argument presented in the book. Its patient study might, we believe, enable students of industrial history to correct their detailed views, and to adjust their general perspective, of English industrial development.

L.L.P.

*A Geometrical Political Economy.* By H. Cunyngname, C.B., M.A. Crown 8vo., 128 pp. Oxford: The Clarendon Press, 1904. Price 2s. 6d. net.

Mr. Cunyngname gives to this little book the sub-title of an "Elementary Treatise on the Method of explaining some of the Theories of Pure Economic Science by means of Diagrams." Within the limited space set by the dimensions of the volume he has contrived to furnish readers unacquainted with the technical refinements of advanced mathematics with an adequate notion of the services which may be rendered to the exposition of pure economic theory by diagrammatic representation. His answer to Cairnes' challenge to Jevons, to produce any proposition discovered by the mathematical method which was not discoverable by ordinary reasoning, puts the position in a nutshell. "For Mathematics," he remarks, "is only 'ordinary reasoning' assisted by a shorthand mode of expression that enables a proposition to be put in a line and visible in one glance of the eye, rather than spread over ten or twelve pages of print." This accurate and brief description of the case for mathematical economics (at any rate in

the form here used of diagrammatic representation) may perhaps be fittingly supplemented by the severe, but not wholly undeserved, commentary on J. S. Mill passed by Mr. Cunyngame. He states that Mill's chapter on the Foreign Exchanges "presents a picture of a man trying to think out mathematical problems without the use of adequate symbols." We suppose that Mr. Cunyngame may have been intending to refer, not to the chapter on the Foreign Exchanges, but to that perplexing discussion of International Values, the difficulty of which we have heard a living economist describe as at once stupendous and unnecessary; but, to whichever portion of Mill's treatise the reference is appropriate, all students of recent developments of economic theory will be prepared to acknowledge gratefully the considerable nature of the service rendered by economists of mathematical training and attainments to accurate exposition. Even if no positive additions had thereby been made to the discoveries of ordinary reasoning, there could be no doubt that subtle errors had been more effectively disclosed, and more successfully eliminated, by the actual use of mathematical apparatus. As it is, some illuminating ideas (such as that of the mutual interaction of different forces), which may be rightly described as mathematical in origin and character, have been expressly introduced into some of the most notable of recent systematic general treatises on economic principles.

In this little book Mr. Cunyngame has, we think, been successful in the object he has set before himself. For he has given easy but sufficient illustrations of the chief modes in which geometrical diagrams have been employed to demonstrate and even to advance pure theory. Although to a non-mathematical student the detailed stages of his reasoning may not in every case be unmistakably perspicuous, yet the mental effort needed for a comprehension of the drift and purpose of his argument hardly exceeds the compass of an ordinarily quick and clear intelligence. He contrives at any rate to whet our appetite. He furnishes alluring indications of the heights to which we may attain, if we only persevere beyond the broken ground over which he carefully conducts us at the beginning of our journey. He shows us plainly how the precise compendious statement of an intellectual abstract conception, which mathematical exposition peremptorily requires, enables the instructed student to see differences which the unaided eye might overlook. Such difficulties, for example, as those connected with the relation of the law of increasing returns to the marginal producer, are made obvious by geometrical expression, although, we may add, their satisfactory solution is not so unmistakably revealed by the same illuminating agency. Similarly, the necessary distinction between a rise and an extension of demand cannot be ignored in mathematical exposition, although it may be slurred in ordinary language. Mr. Cunyngame, who himself was a pupil of Professor Marshall, is rightly anxious that the full honour which that economist deserves as a pioneer of such investigations should be paid by his successors, and he gratefully

assigns a high position to his instructor in the account of the history of mathematical research in Economics which forms an introduction to the volume. But he is not, we gather, in entire agreement with Professor Marshall on every question which he handles, and he himself has made independent contributions to the subject, which find a place in the later chapters of this book. The reader, we may add, who peruses his balanced observations on International Trade, will note with interest that theory (at any rate in its geometrical expression) cannot be cited as conclusive either for free trade or for protection, and he will gain fresh confidence from the persuasion that the only brief which the author of this little treatise holds on disputed economic questions is that of theoretical completeness and exactitude.

L.L.P.

*The Principles of Money.* By J. Laurence Laughlin. xvi + 550 pp. London: John Murray, 1903. Price 16s. net.

The spirit of our age is a questioning spirit, and in some quarters the presumption seems to have been established that the older and more popular a theory is, so much the less likely is it to be true—at least under the changed conditions of present times. To take nothing for granted, and still more, to accept nothing simply on authority, are, no doubt, conditions essential to the progress of science—economic, historical, and all other. At the same time, however, it is equally true that no progress would be possible in the art of presenting the results of scientific investigations in books if every writer thought it necessary to prove everything from the beginning, and also to give the reasons for his approval or disapproval of the treatment of his predecessors: this would be to try not only to explain the truth as at present understood, but to write, as a setting, a history of all false doctrines. These general reflections are meant as an apology for the inadequacy of the review by the present reviewer of Professor Laughlin's book, or rather first volume, on money. Our author takes nothing for granted. If the truth on any topic still seems to be the truth, it must receive a new exposition or new illustrations, although the principal characteristic of the book is the attack made on generally accepted theories. Seeing, however, that the book is to so great an extent controversial, it might have been better to economise space and fix the attention on matters in dispute, especially as some of the clearest and most popular of expositors have already given us of their best in dealing with accepted principles, and even in monetary theory the slate is not to be cleaned altogether. Take, for example, the inconveniences of barter and the conveniences of the several functions of money. Professor Laughlin writes in a graphic and interesting style, but the writers of a previous generation have taken the bloom from the illustrations. The point is, that it is a mistake to try to combine an elementary elaboration of accepted principles with a controversy on some of the most difficult points in the theory of money. The serious student of economics will welcome the work, not because it does almost as well as Jevons—what Jevons had already done to

perfection—but because the writer tries to undo the principal results of the development of the monetary theory of the nineteenth century. If Professor Laughlin has failed in his revolutionary task, he will, at any rate, have done good service (like Mr. Chamberlain in another field, and with other designs) in showing the reality and the strength of the positions attacked.

The centre of the attack is the quantity theory of money. All the minor attacks throughout the volume are supplemental to or dependent on this main attack. The object of the writer is not to show how, with changing conditions, the central principle of the theory requires different qualifications before it is applied to the explanation of the new phenomena: this method had been adopted by previous writers, until only those who followed the development step by step would recognise in the applications, for example, to bimetallism, and the general prices of the world's markets, the same principle that is at first worked out with counters at a game of cards. Professor Laughlin, however, has written not to develop, but to destroy. It is impossible within the limits of a review to do more than indicate the main trend of the argument, and to give some examples of the application to different problems. In the very first chapter (in which, by the way, is an excellent photograph of the wampum of the Six Nations and shell money) the keynote is struck in dealing with the connection between the functions of money as a medium of exchange and a measure of value. The accepted view is that in any economic society some commodity gradually asserts its supremacy as being more readily exchanged than the others. It may be, no doubt, that more than one may prove under the conditions about equally suitable, but for simplicity we suppose that by a process of natural selection one survives and is preferred when choice is possible. As a matter of fact, if we apply the historical method, we find that it takes centuries for the "natural selection" to operate and the natural economy to be displaced by a true money economy. England in the thirteenth century was a great country in a great age, but compared with the England of to-day, its national economy was on a real or natural and not on a money basis. Accordingly, when Professor Laughlin speaks of a primitive community choosing a standard, he is really using the abstract deductive method just as much as if he took the counters of a game of cards. Actually the primitive community no more chooses a monetary standard than it chooses a form of government, which it embalms in a social contract. The view generally accepted is that money originated as a medium of exchange; and this is the view that seems best to accord with the historical evidence. The money of undeveloped societies varies with the stage of development; it is not a matter of choice according to reason, but simply according to habit and custom. So far the development of the monetary standards is on the same lines as with other standards. The wise old men of the primitive community do not choose the foot or the furlong (furrow-long) and the other natural standards, and then use them, but they use them, and in the course of time they become by use

and wont the accepted standards. This mode of origin also explains the survival of the infinite variety of local measures long after the definite adoption of one legal standard.

If, however, as regards weight, extension, capacity, &c., a standard is only evolved by the gradual reduction to one of a series of alternatives—the process only being completed in the modern state—still more obviously is this the case with the standard of value. The measurement of values is much more complex and difficult than the measurements just indicated. Gold has become the recognised standard of the commercial world in this generation only, and at the best it is only an imperfect standard, as Professor Laughlin shows on the usual lines. And it is probably true to say that even in this case the standard was not chosen by the collective or particular wisdom of the nations, but was forced on them by circumstances which had arisen from historical conditions. And when we examine these conditions and the historical development, we find that throughout the medium of exchange has dominated the standard.

When we speak of gold as the standard of the commercial world, it is of course understood that the different nations have their own monetary unit, as in England, the pound sterling; and actual prices are expressed in terms of these monetary units, which are all defined with reference to a certain weight and fineness.

The fundamental question in the theory of general prices is the precise connection between the standard and the general level of the world's prices. In recent times much attention has been given to the subject of the measurement of prices, and Professor Laughlin gives a clear *résumé* of the principal results, making good use of the elaborate work of Mr. Walsh. It is admitted on all sides that the value of gold, however it is measured, is subject to constant change. Professor Laughlin says indeed that this is of no importance to any but debtors and creditors, but, as we learned in the bimetallic controversy, this includes everybody, directly or indirectly.

Passing over this incident, we reach the paradoxical position that the standard of value, unlike other standards—or in a far greater degree—on any view, is itself subject to change. The price of gold is fixed by the mint regulations of the various countries, but the value depends not on the regulations of mints or governments, but on the level of prices.

The question then becomes: What is the relation of the value of gold to other values, or, say, to the values of the representative commodities that are taken as the basis of index numbers? It needs no showing that within narrow limits the value of a mass of gold coins is the same as the value of the same weight of gold of the same fineness. That is to say, the exchange value of gold as a commodity is the same as its value in money. But gold is unlike any other commodity in the commercial world in one respect, and that most important, in connection with prices. By the system of

open mints any amount of gold can be sold at a fixed price. Nothing can change the normal price of gold (reckoned in standard gold coin) except an alteration in the mint regulations of the country in the money of which the price is quoted. Gold never falls or rises in price, whatever the changes in the methods of production, or, more generally, the conditions of supply, or whatever be the change in demand, whether for hoards in the East or gold reserves in the West, or for the arts all the world over. Similarly the price of gold remains fixed whatever be the changes in the relative prices of other things, or in the average of general prices. But though the price is fixed, as already observed, the value is constantly changing. The change in the relative value of gold and any particular commodity is indicated by the change in its price, and the change in the value of gold, compared with things in general, is shown by the changes in the general level of prices. The whole controversy then hinges on the question : How does gold operate on general prices ?

One answer is that which was insisted on so obstinately by the late Lord Farrer. He seemed to think that in making any monetary bargain, that is any purchase or sale, people had in their minds an idea of the value of the pound sterling, just as in buying calico they had an idea of the yard measure. Possibly the natives of India, before the closure of the mints, used in every bargain to go to the margin of doubt whether it were better to spend the rupee on goods or add it to the store of silver ornaments.

But in the western world one only needs to consider what is involved, whether in wholesale or in retail transactions, to discover that no merchant but a goldsmith, and not one private person in a million, ever thinks of the alternative of gold coin as bullion. A person may hesitate between a gold bangle and a pearl, but he does not estimate all his purchases of all kinds of things against alternative gold ornaments. Even when people give gold coin for a watch or a ring, they never think of the value of other commodities in terms of gold bullion.

But if this elementary use of the standard is impossible or absurd, in what other way can it be used directly ? It would be still more absurd to suppose that people in general carry in their minds an idea of the general power of gold as expressed in index numbers. In the modern world there is an infinite variety of ways of spending money, after the primary wants are satisfied, and even they may be satisfied in many ways. People think, indeed, more or less about the alternatives offered on different occasions, and, all unconscious of the logic of Jevons, the wisest of them may try to make the marginal utilities in every case exactly equal. But they certainly do not go to the length, in the unconscious adaptation of economic theories, of thinking of the purchasing power of the last farthing in terms of the index numbers of Mr. Sauerbeck, or even of the *Economist*.

It is possible that between these two extremes—namely, the simple bullion estimate and the method of index numbers—there may be discovered some mode of the direct comparison of the value of commodities with the value of the standard that is

actually adopted by gold-using mankind in general. But the discovery has not yet been made, and to most economists would probably seem inconceivable. Yet it is apparently in the belief that he has discovered some such mode of using the standard of value, that Professor Laughlin has discarded the quantity theory of money.

"In my exposition, the evaluation goes on antecedent to the exchange operation, since the exchange cannot, philosophically or practically, take place until the rate of exchange has been settled; therefore, the amount of the media of exchange offered for the goods must of course equal the figure set upon the goods exchanged. The quantity of the media of exchange is a result, not a cause, of the evaluation between gold and goods, and therefore cannot have been the means of fixing prices" (p. 362). If then we inquire how this evaluation of goods and gold is to take effect, we come back to "the relative subjective importance of gold and goods," p. 363. In the next sentence this is expanded: "If one man in a mining or non-mining country obtains a certain quantity of gold by less effort than formerly, he sets a less high *subjective evaluation* on it, and therefore may offer it for less than formerly of other goods whose cost of acquisition may remain as before."

In other passages it is maintained that: "the offer of a certain amount of a medium of exchange for goods, merely records the result of the antecedent price-making process," p. 316. Again: "the circulating medium is not a cause of prices, it is only a convenient means of exchanging goods after the price has been already fixed. . . . Price is an exchange relation between *goods and the standard money commodity, whether that money commodity be used as a medium of exchange or not*," p. 317. And perhaps the following is the most explicit: "Whenever we think of gold as an element affecting gold prices, it must always be kept in mind that gold is a commodity whose value is governed by general laws just as is wheat. Gold satisfies one kind of wants, wheat another; each has its own utility," p. 338. It is forgotten that any quantity of gold may be sold at a fixed price, and the coin obtained from bullion be spent on other things.

The *direct* use of gold as a standard by the process of "*subjective evaluation*," or even by the method of comparing the relative cost of acquisition of gold and goods, seems utterly unworkable as soon as we pass from the simplest conditions. The quantity theory, on the other hand, has the merit of being applicable in the simplest conditions, and by gradual development to the most complicated. Probably the theory has often been misunderstood and considered inapplicable, simply because it has been supposed it must always be applied in the simplest form, whatever the complications of actual conditions. Much of Professor Laughlin's criticism is sound as against this crude use of the theory. It is not true to say that if gold supplies fall off, general prices must fall exactly and immediately in the same proportion. The relation of the quantity of gold to the level of general prices is extremely complex, though complexity is not the same thing as unreality. But, after a certain point, Professor Laughlin seems to fail to appreciate the develop-



ment of the quantity theory. He argues, for instance, as if the theory failed to answer an inductive test, because no relation is discoverable between the changes in the volume of currency in the United States over a period of thirty years and the movements in general prices as shown in the index numbers. But under modern conditions we must assume that the price levels of any particular countries are related to the level of the world's prices; and that is only one of the qualifying circumstances that must be taken into account.

Professor Laughlin's rejection of the quantity theory is so thorough (perhaps because he once held the theory in too extreme a form), that he does not retain it even as a partial explanation in cases in which it seems not only adequate but necessary. In dealing with token money, for example, he supposes that its value depends entirely on the tacit or implied guarantee of redemption. The quantity must be limited solely because there is a seignorage, which ought to go to the State. It may be remarked that the whole treatment of token coinage is unsatisfactory, and the reason is the fundamental misunderstanding of the nature and uses of standard money. That is, indeed, as he says, the "pivotal subject" in the whole exposition of money. The very definition of token money is vitiated by this misconception. "Either with subsidiary currency or with money of larger denominations the *existence of a seignorage* is the test to be applied in deciding whether it is token money or not." From which it would follow, amongst a number of other curious instances, that up to 1666 England had no money but token money. Similarly as regards inconvertible paper, everything is made to turn on the credit of the issuers and the ultimate chance of redemption. From which it would appear that in the period of the bank restriction in England, the premium on gold fluctuated with the "subjective evaluations" of the credit of the British Government or the Bank of England. No doubt cases may occur in which inconvertible paper is depreciated as soon as issued, simply because the government is distrusted; the supporters of the quantity theory do not deny the influence of credit. But what they say is, that, whatever be the credit of the State, or the belief in ultimate redemption, after a certain quantity is issued, depreciation must ensue.

In conclusion, it may be repeated that Professor Laughlin has done good service to the development of monetary science if his criticisms should lead to a re-examination of the principles which, sound in themselves, have been applied without due consideration of their real meaning. And, finally, it may be said that the book is written in a clear, vigorous, and interesting style, and, above all, with the utmost impartiality and the evident desire of doing justice to the views of opponents. It is always stimulating, without being, as so often happens, irritating.

J.S.N.

*Die Statistik der Edelmetalle als material zur Beurteilung des Standes der Währungsfrage.* By Ernst Biedermann. 132 pp., folio. Berlin: Wilhelm Ernst und Sohn, 1904.

This useful series of statistical tables, relating to the production

and distribution of the precious metals, compiled from the best sources, has already, in great part at least, appeared in the *Zeitschrift für das Berg- Hutten- und Salinenwesen im Preussischen Staate*, in continuation of a paper published in 1898 in that Journal. The tables are not naked statements of figures, but are accompanied by a comment, which adds considerably to their value. A further merit is that when two authorities give different figures or estimates, both these figures are given. Thus the figures of the gold and silver used for currency taken from the reports of the Director of the American Mint, are given side by side with the figures given by Mr. Probyn in this *Journal* in the year 1896. The discrepancy is sometimes rather startling. In addition to the tables, there are three coloured diagrams representing geographically some of the more important facts contained in the tables. One of these diagrams is of special interest. It represents the net import or export of gold and of silver for the five years 1896 to 1900, for the chief countries which export or import either of the precious metals. By a rather ingenious method of graphic representation we are enabled to get an idea of the main streams in which gold and silver flow from the place of their production to the place where the metals are used.

The author draws the following general conclusions from the statistics:—(1) The world's gold production appears at last to have overtaken the world's silver production. (2) The gold production is sufficient to satisfy the needs of gold standard nations. (3) Probably the silver which has recently been produced has partly been hoarded, and not used directly in the arts. (4) India's demand for silver since the closing of the mints has not fallen off as much as was feared. (5) The United States have absorbed the greater part of the increased quantity of gold from 1896 to 1900.

An appendix discusses the currency question, ending with a summary of the arguments of the gold party in Germany, and the trade balance of the most important countries of the world, in which Herr Biedermann warns us against undervaluing the kernel of truth in the mercantile theory. C.P.S.

*La Transmission de la Propriété Immobilière et l'introduction des Livres Fonciers en Angleterre.* By A. de Lavergne. vii + 336 pp., 8vo. Paris: Guillaumin et Cie., 1905.

The compulsory provisions of the Land Transfer Act, 1897, have given rise to so much acrimonious controversy, that it is difficult for an Englishman to take a survey of the question from the outside. Under such circumstances a book, written with great lucidity, and based on a considerable knowledge of the English law of real property, by one of our friends across the Channel, is very welcome. M. Lavergne appears as an advocate of the new system, but as almost necessarily he has been obliged to study the official reports, which are, in the main, arguments for the continuance and development of the system which has given rise to these officials, it is possible that if the author had more practical knowledge of the actual dealings in real property in England, he would have taken

a less favourable view of the Registry. In particular his theory that solicitors are the younger sons of large landed proprietors and peers, and therefore indirectly have an enormous influence in Parliament, can hardly be well founded in fact. The prejudice against solicitors is only part of the general, and not altogether unnatural, prejudice which exists in most countries against the legal profession; in connection with land registration this prejudice has been very carefully exploited by those who wished an official system. We feel sure that M. Lavergne would not intentionally be unjust to a great profession, but none the less does it seem that he has overstated the influence, and undervalued the motives, of many honourable, if not prominent, men.

The law of real property in England would disgrace any civilised nation. It is peculiarly disgraceful for a nation which prides itself upon being practical. The law is highly complicated and highly technical, and as a natural consequence the art of conveyancing is technical and difficult to a degree. The upper classes are the landlords, they have elaborate settlements and wills of land. The difficulty of proving the title to a piece of land is often great, and nearly always expensive. The middle classes now frequently make their settlements of stocks and shares and other personal property. The shares are vested in trustees, who hold them upon the trusts of the settlement. There is no investigation of the title to shares; they are transferred by a very simple document from one person to the other, and the new owner is entered on the register of shares in place of the former owner. Why then cannot this be done in the case of land? The answer is, that the law recognises the existence of *estates* in land, estates for life, estates tail, and so on. The settlement of such property, with its pin money, jointures, portions, and term of years for securing the same, as well as its estates for life and in tail and remainders over, is a terrible thing. If a system of land registration is to be really effective, it should permit the entry on the register of nothing but the whole estate in fee simple of land. All dealings with the legal estate off the register should be prohibited; all settlements should only be made by means of equitable limitation off the register, as in the case of personalty. Then, speaking broadly, the transfer of land might in time become as simple as the transfer of stock. The defect of the present system is, that it has attempted to graft the system of registration on to the old system, and in so doing had caused great complication, considerable expense, and very little advantage.

It is indeed evident that if a new system is definitely better than an old one, persons in the course of time, in spite of any initial conservatism, will adopt it. In the year 1862 the Companies Act and the first Land Transfer Act were passed. The former was instantly an enormous success; the latter a complete and absolute failure. To say that the big insurance companies, the bankers, the building societies, and all other bodies which had large transactions in land, were persuaded by their solicitors, against their interest, not to adopt the new system in the case of land, is absurd.

The Act of 1862 was a complete failure; the inquiry into its working shows the cause—great delay, great expense, with no corresponding benefit. It was supposed that certain modifications might make the system more acceptable and workable, and the Land Transfer Act, 1875, was framed, but proved a failure; and in 1881 and 1882 Parliament turned its attention to making real reforms, and passed the Conveyancing Act and the first Settled Land Act. These most beneficial Acts were not opposed by solicitors; and it may be noted that the Law Society are most zealous in promoting Bills for simplifying and improving the law of real property. Of late years nothing has been done to improve the law of real property. In 1897 the final effort was made. "If persons do not like the new system, because it causes delay and expense, and adds new complications to the law without getting rid of old ones, they shall be forced to adopt it." The theory that the failure of the previous Acts was due to the wicked solicitors was sedulously worked up. The system was to be forced upon an unwilling set of vendors and purchasers, but it was to be applied for the first three years to one county only as an experiment. The three years have passed, the experiment has been made, and it was understood that there would be an inquiry to see how the experiment had worked, but no inquiry has yet been undertaken.

The fact is plain. The law of real property must be amended and simplified at many points. Our system of conveyancing is terrible. If once we can get these reforms, then a land register, on which land will be transferred as easily as stocks and shares, will be the culmination of the reform. At present, with legal as well as equitable estates off the register, and the attempt to fit two incompatible systems together, the chief result is that two documents are required where only one was necessary before, and that those who deal in land are more heavily handicapped than before. Free trade in land is desirable; it is now farther off than ever. To make the system popular, absolute titles are granted in cases where the titles would not be sufficient to satisfy an insurance company about to lend money. The officials are working hard to keep the system. The public only knows that the old system was intolerable, and is therefore willing to believe that the new will be better. But when some genuine reform in the law of real property is made, the new may prove worse than the old. What is wanted is an inquiry; what is refused is an inquiry. Why should not the public be permitted to know how the new system is actually working?

From the general consideration of the new system we can turn to some points of detail. M. Laverne points out that copyholds are excluded from the Act because the Court rolls offer publicity. But the great difficulty about copyholds is that the old descriptions of them cannot be identified with the modern state of the property; in many large estates the copyhold portions cannot be distinguished from the freehold portions. This is a serious thing, and no amount of publicity is of any assistance. Secondly, the use of the word "ocean," as applied to conveyances of land, is misleading. Where

registration of deeds exists, as in Middlesex, such transactions are in no sense occult. Under the new system it is true that the index map is open to the public, but this does not disclose the owners of the land. I can at once find out who are the owners of stocks and shares; I cannot, under the new system, find out who is the owner of a piece of land, any more than I could under the old system. There is much to be said for a system under which the ownership of land would be as public as it was in the time when actual livery of seisin was the practice. Thirdly, we may doubt whether the new system assists small dealings in land. It is quite common for a country solicitor to be familiar with the main titles in the neighbourhood, so that the investigation of title is very simple, and is done by the solicitor at a very small cost. But the points which the critic of M. Lavergne's book can seize upon are so few and unimportant, that it is difficult to realise that the author is not an Englishman. C.P.S.

*Statistical Methods, with Special Reference to Biological Variation.*  
By C. B. Davenport. Second (revised) edition. viii + 223 pp., Fcap. 8vo. New York: John Wiley and Sons, 1904. Price 6s. 6d. net.

This is a pocket handbook of formulæ and tables with brief explanations, intended primarily for biological laboratories, but it is likely to be of considerable use to those who are examining statistical groups from whatever source. The book can only be used, as any set of mathematical tables, by those who have studied and mastered the methods involved in the works of authorities. The formulæ are mainly of the class which Professor Karl Pearson has made familiar, and the references to his works are very numerous. A copious bibliography intended "to include all recent works containing usable quantitative data in botany and zoology" is one of the most important sections. We notice that the valuable table given by Professor Karl Pearson (*Philosophical Magazine*, July, 1900), for estimating the probability that a particular group should be found by random selection from an infinite group determined by a particular curve of error, is not reproduced, though a reference to such tables is given (*Biometrika*, I). This and others might, perhaps, have been given instead of the logarithms of numbers and of the trigonometrical ratios, which are so easily accessible otherwise. It seems a little unreasonable to give the squares and cubes of three figure numbers to six and nine digits respectively, when in ordinary approximate work only three digits would be accurate. If the book were thus lightened the crowded type of Table IV might have been avoided. No doubt every care has been taken to ensure accuracy, but we notice that on p. 117 the value of  $\frac{1}{\sqrt{2}}$  is incorrect in the sixth decimal place. Is not Mendel's first name Gregor, not Georg (p. 57)? These, however, are small matters, and the book has proved its usefulness by reaching a second edition. A.L.B.

*Bibliographia Economica Universalis*. Second year, 1903, xix + 199 pp., 8vo. Third year, No. 1, xviii + 22 pp., 8vo.; Nos. 2 and 3, 44 pp., 8vo. Brussels: Institut international de Bibliographie. Price 5s. per annum.

Now that the bibliography, which forms part of the *Bibliographia Universalis*, has reached its third year, it will not be considered unfriendly to offer certain criticisms, in the hope that Dr. Mandello may think fit to adopt some of the suggestions made in future numbers of this admirable and important work.

In the first place, the bibliography only catalogues books which are written in French, German, English, Italian, and Hungarian. The inclusion of Hungarian books is no doubt due to the fact that the editor is of Hungarian nationality; but if Hungarian books are included, it would only be reasonable to include books written in Dutch, Spanish, and Russian. Holland, in particular, produces important works on economic subjects.

In the second place, the number of "*Publications périodiques dépouillées*" should be enlarged, or, if that cannot be done, a better selection should be made. The remarkable omission of the *Journal of the Royal Statistical Society* has at last been made good; but *Biometrika*, one of the most important statistical publications in the world, is not included. It is certainly an anomaly to include the *Church Quarterly*, the *World's Work*, and the *Review of Reviews*, and to exclude the *Edinburgh* and the *Quarterly*, both of which from time to time contain economic articles of great value.

Turning to the heading statistics, we find that there are remarkable omissions in the volume for the year 1903. The *Financial and Economic Annual of Japan* is omitted; many English statistical Blue-books are absent; the statistics of Norway, Sweden, and other important countries appear to have been overlooked. It is to be hoped that in the future all these omissions will be made good.

Under "theory and methods of statistics" (which has, we are glad to note, replaced the heading "Science of the Statistics") we should expect to find references to papers published in the *Philosophical Transactions* and other journals of a mathematical nature, but there none are given. Is it possible that such journals have not been *dépouillées*? On the other hand, the 77th annual general meeting of the Royal Statistical Society is classified under theory and methods of statistics, as is also the 77th annual report and accounts. Is it worth while to include them in a bibliography?

In arranging the various statistical annuals and year-books, it would be a great convenience if they were classified in groups according to the countries they refer to. If, for example, one wishes to pick out all the Austrian statistics, one has to find all the references which contain the mystic numbers (436) at the end of the number which indicates the class of the book. A short explanation of these numbers may perhaps be of service. All subjects are divided into ten classes, numbered 0 to 9; of these numbers 3 is *sciences sociales*. Each of these is again subdivided into ten classes, indicated by the numbers 3 to 39; of these

statistics is 31, and economics 33. A third figure gives a further subdivision, thus 311 is theory of statistics, 331 is labour questions. Another figure after a point gives a still more minute subdivision, e.g., 331'2 is wages, 331'6 unemployed. Geographical distinctions are indicated by further numbers in brackets, e.g. (4) is Europe, (47) Russia, (471) Finland. So that the agricultural statistics published by the Board of Agriculture will be numbered 31'63 (42). The 31 indicates statistics, the 63 agriculture, and the (42) England.

This method of classification, which is adopted throughout the *Bibliographia Universalis*, is one of great utility, but the value of each number of the bibliography would be increased if the books included in each subdivision were arranged in some regular way. We have already suggested a geographical arrangement for the various statistical annuals; other books might be classified by languages, and then all the books in a given language classified by authors in alphabetical order. It is true that this further arrangement will give some, though not much, extra trouble, but the value of the bibliography, if it is not to be cut up for the purpose of cataloguing, would be increased.

The criticisms which have been made above are not made in any captious spirit, but in the belief that, if they prove well founded, Dr. Mandello will be ready to profit by them. C.P.S.

*United States Census Bulletin No. 8. Negroes in the United States.*

The numerous and important considerations involved in what is comprehensively known as the "negro question" in the United States (or are we to say Usona?), excite a general interest in the great Republic, which takes the form of an ardent and continuous thirst for statistics on the subject. The Census Bureau is to be congratulated, accordingly, upon the expedient it has now adopted of compiling into a single volume the details regarding the negro population scattered over the many volumes and bulletins of the twelfth census. The work receives additional value from an analysis of the information in regard to vital statistics and rural and urban communities, contributed by Professor Willcox, and from the account of the negro as farmer by Professor Du Bois, an eminent representative of that race.

The initial question is: "What is a negro?" In view of the existence of statutes prohibiting miscegenation with anyone with one-eighth or more of negro blood, the definition is one of considerable moment. After several attempts at accuracy in successive enumerations the census authorities on the occasion in question had recourse to that universal referee, public opinion, that is, the colour-reputation of the subject in his own neighbourhood, which does not appear to hold itself limited by the statutory fraction above mentioned. The result of an extended interpretation of the title, however, does not seem to have been any material exaggeration of the numbers to whom it was applied. On the contrary, a possible inclination in one direction to attribute black blood was apparently outweighed in another by the omission of

that characteristic altogether, to the extent of more than 2 per cent., so that, on the whole, the estimated deficiency in the negro census stands at about one in fifty. In 1870, as is well known, this deficiency was far more extensive. Another change in procedure in the 1900 enumeration is the omission of recognition of shades of colour amongst those of negro or mixed blood. This is justified by the experience of four preceding enumerations, at which the proportion of mixed blood in the negro community was successively recorded as 11, 13, 12 and 15 per cent., with such differences in the return of the same area at the different times as to indicate a very casual enumeration, justifying the census reporters in holding that at least 10 per cent. of inaccuracy should be admitted. This much, however, can be gleaned from the figures, that the proportion of mixed blood is, generally speaking, inversely as the proportion of negroes in the total population of the locality. Wherever the ratio of negroes is high, that of mulattoes is low, except, perhaps, in a few large cities. This feature in the relations between the two races may be contrasted with the conditions under Spanish rule in Cuba and Puerto Rico, where about five-sixths of the negroes are of mixed blood.

Taking the returns at the discount above mentioned, one of the first points to be noted is that we are dealing with an indigenous population, since no more than about 20,000 of the 8,834,000 recorded were foreign-born. It is, moreover, the only community in the United States which shows the feature almost universal in Europe, of an excess of females, of which sex there are 1,012 per 1,000 males, against 996 amongst the native-born white population. It is as well to bear in mind, in connection with this feature and with the relative proportion of the negro element in the population, at large, that the importation of slaves from Africa was prohibited in 1808. At the first census taken after that year the negroes were 19 per cent. of the whole, and remained just below that figure until the white immigration in the middle of the century reduced the proportion to 14 per cent. In 1880 it was 13, ten years later, 11.9, and in 1900 11.6 per cent. Another way of putting it is that at the beginning of the nineteenth century there were 233 negroes to every 1,000 white men in the States and 132 at the end of it, the island possessions being left out of the question. The stimulus of the slave trade in the early years, therefore, raised the rate of growth among the negroes above that of the whites, but with the prohibition, the rate declined below the latter, and although, except during the fifties and late forties, the general tendency of the rate has been downwards in the case of both communities, the falling off has been, since 1810, more marked among the negroes than among white people. Between 1860 and 1880, to take the more recent returns, the negroes increased by 48 per cent., and the whites by 61. At the last census the increase over 1880 was 34 per cent. of negroes and 54 of the white population.

In making the above comparison, however, consideration is not given to the relatively localised distribution of the negro element as compared with the spread of the white man over the whole



country. This concentration of the former is very remarkable, and the inequality of distribution tends to divide the community into two almost independent sections, with characteristics, as will be shown later, widely differing from each other. Speaking in general terms, the negro exists as a homogeneous and settled community almost exclusively along the southern Atlantic coast, in the lowlands bordering upon them, and up the Mississippi as far as Kentucky, with a western extension into Texas. The whole of this tract lies within what is called by the Federal Agricultural Department, the Australriparian zone, the land of cotton, rice, and sugar-cane. Here is found nearly 90 per cent. of the total continental negro population. About 31 per cent. is located in Georgia, Alabama, and Mississippi, and the same proportion in Virginia, Louisiana, and the Carolinas. Texas, Tennessee, Arkansas and Kentucky account for 22 per cent., and 5 per cent. is equally shared by Maryland and Florida. The remaining 11 per cent. is scattered over thirty-six States, of which five only contain respectively as much as 1 per cent. of the negro population, and fifteen return less than one-tenth of that proportion. Making use of the actual figures in place of proportionate ones, the Western States return only 30,000 negroes, the New England group but 59,000, and of the total number of 8,834,000, 7,900,000 reside in the South Atlantic and South-Central States. In relation to this concentration of the negro population may be considered the proportion borne by the latter to the total of the regions thus inhabited. The general proportion throughout the Republic in 1900 was, as just mentioned, 11.6 per cent., but this was reached in only fifteen of the States, and in two of these, Delaware and the District of Columbia, the aggregate population is small, and the negroes more or less detached from the larger communities further south, in both habits and occupation. In two States, Mississippi and South Carolina, the negroes outnumber the whites. Louisiana, which in this respect bore them company from the early years of last century, now returns only 89 negroes to 100 whites, and thus joins Georgia, with 88, and Alabama, with 83 per cent. These five States, with Florida, where, as in Alabama, the proportion has increased in the last ten years, have always stood high on the list, whilst Virginia and Maryland, which once stood with them, have fallen to 55 and 25 per cent. respectively. Reverting now to the question of the relative increase of the white and negro population in the light of the unequal distribution just described, it is instructive to consider apart from the rest the two geographical divisions in which the former is mainly congregated, viz., the South Atlantic and the South-Central zones. Here, from the beginning of the last century up to the census of 1860, the rate of increase was considerably higher amongst the negroes than amongst the white population. The positions were then reversed, as shown below :—

	Rate of Increase per Cent.		Percentage of Negroes on Whites.		Rate of Increase per Cent.		Percentage of Negroes on Whites.
	Negro.	White.			Negro.	White.	
1800-20	79	68	57	1860-80.... '80-1900	45	50	57
'20-40	61	55	60		33	56	51
'40-60	55	68	59				

If the century be divided into the periods of slavery and liberation, it will be found that in the first, the negroes increased at the rate of about 2.53 per cent. annually, and the whites at 2.39. In the forty years of freedom, however, the annual rate among the negroes has been only 1.66, and that among the whites 2.16 per cent. These calculations indicate that the apprehension which has received prominent expression in some quarters, that the white population is being swamped by the black is, on the whole, without foundation. There is a tendency, it is true, in the Southern States for the centre of white population to move westwards at each enumeration, whilst that of the negro moves more towards the south, so that the concentration of the latter round the Gulf of Mexico is increasing, whilst the whites are expanding more freely over the interior. It is in the Mississippi alluvial tracts, therefore, that we chiefly find the negro in numerical preponderance, and, if we take a smaller unit than the State, the census shows 55 counties with between 75 and 94 per cent. of their population negro, the greater number of them being in Mississippi, Louisiana and Alabama. The respective rates of increase in these tracts are not ascertainable with accuracy, but, whereas the negro resorts, no doubt, in considerable numbers to neighbouring cities, there is, on the other hand, more long-distance immigration on the part of the whites. In regard to natural increase, the absence of general registration of births and deaths prevents adequate comparison between the two races, but the figures do not denote the greatly higher fecundity generally attributed to the negro community. It is true that, taken as a whole, the negroes return a slightly higher proportion of children under 10 years old than the native-born whites, but the difference is still smaller in the Southern States, where the proportion among the whites is higher than elsewhere. Again, taking the proportion of children under 5 to women between 15 and 45 years of age, the balance is in favour of the whites even in the south, where twenty years ago this was the exception. There is also to be taken into account the undoubted fact that the negro is shorter lived than the white man, so that, whatever the greater proportion of the young, after 30 years of age, the superiority of the white is established. In both races the fecundity appears to be decreasing, and at a rate faster among the negroes than among the whites, at least, in the States of the two great southern divisions, and this in spite of a wave of prosperity just before the last census, which seems to have led to an abnormal

increase in the proportion of early marriages, especially amongst the negroes. Against this we may set the fact that amongst them the widowed and divorced hold a proportionately higher place in the returns. This may be due, of course, and probably is due, to the higher mortality after 30. The proportion of widowed is spreading amongst this community, aided by divorce, and, according to the census reporter, by separations which do not trouble either death or the law to regularise them.

The above considerations, taken in the aggregate, seem to furnish no evidence of a flowing tide of negro predominance even in the Southern States where this element is relatively most prominent in its numbers, and certainly none of its durable or material supremacy. In order to appreciate better the place the negro actually occupies in American society, the distribution should be examined with reference to other than its merely geographical characteristics. It was remarked early in this review that the negro in the north and west differed very considerably from the same race in the south of the Republic. In the latter it is indigenous, and the census shows that in the South Atlantic States only 9, and in the South-Central only 15 per cent. of the negro population were born outside the State in which it was enumerated. In the Western States, on the other hand, three-fourths of the negroes are immigrants, and even in the North and North-Eastern States, where they have been installed sporadically for several generations, less than half their number were born within its limits. The migration of the negroes from the south to the north and west, though by no means rapid, is still considerably more brisk than that of the white man from the same tracts, and seems to be increasing. Its general character is indicated to some extent by the fact that except in the west and a few of the North-central States, the female element predominates in number, more especially in the larger towns, which attract the bulk of the negro population. In the rural portions of the south, on the contrary, it is the males who are in the majority. According to the census classification, it should be stated, the urban limit is drawn as low as 2,500 inhabitants, and must therefore include, except in the newly settled tracts, a considerable admixture of a population essentially rural in its character. But below this limit the difference between the south and the rest of the States is strikingly indicated. In the latter, the rural negro, thus conventionally defined, numbers from a fifth to a third of the population, whilst in the two southern groups it is returned as 81 and 84 per cent. respectively, and in more than one instance exceeds 90 per cent. A similar difference in this respect exists in the case of the white population, which is, in the south, rural to the extent of 81 per cent., against 49 in the north and west, but in the latter divisions the larger cities claim but a third of the whites, as compared with one half of the negroes. The excess of females in the urban population is, moreover, a feature among the negro population which is shared by the white, but to a considerably less extent, especially in the south, and may be attributed to the same cause, one not confined to America, but

operative in all countries where domestic service is practically monopolised by women, viz., the better field of employment offered by the city to that sex. The attraction of the large town may be measured by the fact that between 1890 and 1900 the negro increased in the urban districts by 35 per cent., as compared with 13·7 in the country districts. Taking the Southern States alone, the corresponding figures were 21·7 against 16·4. The increase is chiefly manifest in the large and the small towns, not in those of middle size; and in every case but that of Washington the rate of the growth of the negro community in those places is higher than that of the whites, a feature also of the increase in the cities of the rest of the country. It is worth noting that in the rural tracts of the south the white population increased by 25 per cent. against 16·4 amongst the negroes, a difference which is not apparently attributable to emigration only.

The occupations returns throw some light upon the inequality of the distribution of the negro element. As to these statistics, the census reporter enters the usual *caveat* and adds that in spite of the most carefully worded instructions, the negro householder stumbles over "laborer," even as in this country the Caucasian, who spells it differently, trips over that conveniently elastic designation. The comparative simplicity of negro industry, however, renders the inaccuracy of less consequence than in a more complex system. In the present day, Carlyle's *obiter dictum* does not, indeed, hold good, and "Quashee's" ideal is no longer bounded by visions of unlimited pumpkin pie; none the less does his fancy turn fondly to the occupation of which that succulent vegetable is a bye-product. Cultivation, in the region in which the negro is most at home, is his chief mode of gaining a living, and from two-thirds to three-fourths of his race are thus engaged. It is an occupation, moreover, which can be taken up earlier and dropped later than any other, and in the case of cotton, the chief crop grown, it affords ample and suitable work for the women and girls of the family. Marriage, therefore, is no bar to the continuation of female labour among the negresses, whereas the returns show that among the white women of the States, definite occupation with a view to a livelihood is merely the preliminary to matrimony and is dropped when that state is entered.

It is not to be wondered at, then, that amongst the negroes of both sexes over 10 years of age the breadwinners should bear the high proportion of 62 per cent. as compared with 48·6 among the whites; or that in the Southern States only 11·8 per cent. of the white women over the above age should be enrolled among the breadwinners, whilst the corresponding figure among the negresses rises to 41·3 per cent. Again, in regard to the prolonged period of gainful activity allowed by the pursuit of agriculture, it appears that between 10 and 15 years of age the negro boy is at work to the extent of 49 per cent., whilst his white contemporary, who is probably maturing at school, returns no more than 22·5. The white man also leaves off earlier, as at over 65 years old there are only 67 per cent. of his number engaged in work, whilst

85 per cent. of the negroes of that age are still returned as bread-winning. During the prime of life, or from 25 to 45, the balance is strongly in favour of the white race. In the case of the women the contrast is still more marked. The percentages among the negroesses of all ages is 41, against 16 among the white women. Between 10 and 15 years old the returns give only 7 per cent. white girls at work, but 31 per cent. of negroesses; and at the end of life the proportions are 7·3 against 28·5 per cent. It is hardly necessary to point out that this remarkable difference is not racial, but industrial, and due almost entirely to the cause mentioned above, viz., the large share taken by the women and boys in the cultivation of the family holding. To some extent too it may be attributed to the early age at which the negress enters domestic service, a pursuit that ranks next to, and in some parts of the country almost equals agriculture in its place in negro predilection. In all States but those predominantly agricultural, the main employment of the negro is in domestic or personal services, and even in the south, wherever large towns are conveniently near the home, it is the same. Taking both sexes together, cultivation and service occupy about 86 per cent. of the negro breadwinners, and 1 per cent. more may be added on account of dressmakers and seamstresses, who come next on the spindle side. The census report indicates certain directions in which the negro is losing his ground, either absolutely, owing to changes in method or fashion, or relatively, owing to white competition. Amongst the employments thus affected are mentioned laundrywork, in which both machinery and the heathen Chinese are factors; sewing, the province of which has been invaded successfully by factory labour; and the lower mechanical industries, such as smithwork and carpentry, regarding which no explanation is given. On the other hand, there is a keener demand for negro milliners, nurses, and midwives, as well as for pastors and masters of that race. The number of teachers increased by 41 per cent., which is double the rate of increase of the negro population, whilst ministers of religion waxed numerically to the extent of 28 per cent. It is in harmony with popular report that the negro clergyman should be in higher proportion to the total of his race than his white compeer, but the census shows, in addition, that he is relatively more within hail in the States where the negro is a sojourner than where he is at home; for there are 160 ministers per 100,000 negroes in the south, and 239 in the north and west. The report leaves it an open question whether this difference is attributable to the preponderance of wealth or of "urbanity."

As regards the increase in the relative number of teachers, the returns of illiteracy show the needs to be somewhat pressing. In spite of the considerable decrease in the proportion of negroes of 10 years old and upwards unable to write, there remained at the last census 44 per cent. in that condition, as compared with 9 per cent. among the whites. In the Southern States, as may be expected, the proportion is far higher, and over a great part of Georgia, Alabama, Louisiana, Mississippi and South Carolina, from

half to three-fourths of the population over 10 is illiterate, in the sense in which that term is applied in the census return.

The standard is higher in the north and west, and except in a few of the central States, where it rises to about 20 per cent., the proportion ranges about 13 and 14 per cent., falling in New England below 12. Even this, however, is five times the white man's figure in that province. Difference of occupation is enough to account for most of this variation. In the towns of 25,000 and upwards, for instance, the proportion is 24 per cent., against 48 in the rural districts, and here the difference is not much greater than between rural and urban whites. In the south, indeed, it is less; since there the town negro returns 31 per cent., as compared with 50 in the country, whilst the white figures are 3 per cent. against 13. Again, the average proportion is materially raised in the case of both negro and white population by the remarkable difference between the illiteracy above and that below 35 years of age. The negroes over 20 years old at the close of the Civil War were too old to avail themselves of the reorganised educational system which was then introduced, so that the return shows those now from 45 to 55 years old to be illiterate in the proportion of 68 per cent., but in the case of those 10 years younger the proportion falls to 52, and to 39 among those between 25 and 35 years old. Even amongst the whites the same tendency is apparent, though it begins to show itself at a later age. It is not improbable that in Southern Europe, and even in parts of the West, this feature is present in the returns. The women are, as usual, more illiterate than the other sex, but the difference is closing up, and a marked improvement in the proportion is found in all parts of the States except in the extreme south.

The general position appears to be that the negro community, numbering about one-ninth of the population, and kept distinct from the rest by strong racial sentiment, remains fixed, for the most part in the south and south-east of the States, where it was originally imported in slavery. It still pursues mainly the occupations to which it was trained in the days of bondage, agriculture and service. The former, of a somewhat specialised kind, it now exercises upon holdings of which about one in four is owned and the rest rented. These holdings are mostly of a kind which can be adequately worked by a single family, each member contributing some part of the labour, the main produce over and above the food supply being grown for export. Intellectually, from a literary standpoint that is, the negroes remain at a low level, and though individual members of their community have risen to distinction in a professional career, these only make more apparent the general depression. To a small extent they have wandered from their main settlements, and when apart from their home surroundings extend their horizon and vary their pursuits, but even in the midst of a more vigorous life-struggle, they seem unwilling or unable to gain a secure footing in other than the rear ranks of workers, and while holding their ground in those ranks, they cannot be said to have, as a whole, materially advanced

from the position in the general scheme of the great Republic which they held a generation ago. J.A.B.

*Work and Wages*, in continuation of Lord Brassey's *Work and Wages* and *Foreign Work and English Wages*. Part I. *Foreign Competition*. By Sydney J. Chapman, M.A.; with an Introduction by Lord Brassey. xxxv + 301 pp., 8vo. London: Longmans, Green, and Co., 1904.

At the outset it must be said that this is a useful collection of interesting facts concerning the chief industries of the United Kingdom, associated with a good deal of parallel information about the same industries in other countries. Not a few reports by competent authorities have been issued during the last two or three years—such as the volume of the British Iron Trade Association on America, and its earlier report on Belgium and Germany, the official reports on American locomotives in use in Burma and Egypt, and Mr. Young's book on the American cotton manufacture; and Professor Chapman has rendered a real service by selecting the more pertinent passages from these and similar writings, and presenting them to us in a compact and convenient form. Such accounts cannot, indeed, take the place of that economic "morphology"—that account of the shape and structure of the several industries and their component parts—which remains the ideal of economic students; but certainly they are welcome supplements to the knowledge which was easily accessible before. The book should be a godsend to journalists; and it will probably be much used, as it deserves to be, in those courses of instruction of a descriptive nature which are now being introduced into our Universities.

But it would have served these purposes equally well, though perhaps it might not have appealed so much to what is hinted at as "the present time," if it had appeared without the first chapter and without the introduction. "Professor Chapman," we are told by Lord Brassey in the introduction (p. vi), "has been careful to steer clear of the fiscal controversy." The occurrence of such a sentence can only be explained on the supposition that Lord Brassey has omitted to read Professor Chapman's first chapter, and Professor Chapman to read Lord Brassey's introduction. In all the rest of the book, it is true, Professor Chapman has confined himself to an impartial presentation of the material before him. But he prefaces all this objective and concrete matter with a chapter on "the conditions of international trade." Here he gives us a statement of the Ricardian doctrine; and this perhaps he may with some justice regard as the common possession of all economists (though it has never impressed even individualist economists in France, to say nothing of the historical Germans, with the veneration we Englishmen feel for it). But to that he tacks on a number of assertions which are evidently highly disputable:—

"If dumping continued, the industries affected here would have

to accommodate themselves to it . . . This they should succeed in doing without great difficulty" (p. 15).

"To argue that by suffering cheap imports of this kind we . . . throw away the advantages of increased returns . . . from production on a large scale in this country, is to reason in an atmosphere of unqualified abstractions and away from the facts. Of such a consequence as an appreciable element there need be no fear, &c." (p. 16).

These assertions may be well or ill-founded; and, for my part, I should like to see the arguments for them set out at length; but a writer who takes occasion, however properly, to express himself thus, cannot be said—consistently with the ordinary usages of language—to "steer clear of the fiscal question." The fact is that it is humanly impossible for any of us who try just now to handle economic themes, to "steer clear of the fiscal question;" nor is there any adequate reason why we should seek to do so.

The doctrine of international trade, however, when freed from the disputable appendices here attached to it, must be confessed to stand in no easily-observable relation to Professor Chapman's subsequent narrative. It seems to be placed in the forefront partly as a warning against the notion that commerce depends on the absolute advantages a country possesses instead of on its relative advantages, partly to console us for the possible loss of particular branches of trade; but it is not brought into any vital connection with what follows. We are told that such and such information would enable us to "form an idea as to the industries in which each country possessed the greatest advantages in production, and therefrom deduce the most probable lines of international trade" (p. 16). Well, what are those industries in the case of Great Britain? The ordinary reader would certainly be excused if he derived the impression from the subsequent chapters that we might expect to retain *all* the great branches of business which Professor Chapman surveys in turn. Is this the corollary we are intended to draw from the doctrine of international trade? Can it be that we enjoy an equal superiority in so many directions? If not, what would be a reasonable forecast of the future course of our international trade? The present writer professes himself not so much a sceptic as to the abstract doctrine, as a trembling believer with a large fund of agnosticism. Between the abstract theory with its "mythical labour-capital units"—a theory which needs only to be stated to be grasped as a bit of reasoning—and the actual facts of international trade, there is so wide a gulf to be bridged, and it is but rarely that economists try to throw across even a rope of connection.

The primary purpose, however, of the volume, according to Lord Brassey's introduction, is not so much to tackle the whole of this vast theme, as to contribute one particular element to its solution. It aims at "examining anew the relative efficiency of British and foreign labour" (p. v). Any writer who, like the present, has taken a part in current fiscal discussion, will be suspected of bias, and will suspect himself; and therefore I



hesitate to say what, however, I imagine most serious students will think, viz., that if they examine the book from *this* point of view, they will rise from reading it with a sense of disappointment. For the treatment here of the efficiency of labour is very incidental, very fragmentary, and very inconclusive. The very conception of "efficiency" floats throughout in the vaguest and most undefined way before our minds. Sometimes it is the "efficiency" of an industry "in general" that we are invited to consider. Thus we are told: "American engineering in general is certainly highly efficient. In every shop almost all the shifting of material and machinery . . . is effected mechanically, with remarkable precision, and a celerity which confounds the visitor . . . Expensive and highly skilled labour is economised in every possible way," &c. (p. 132). Here it is mainly the substitution of mechanical power for human labour that is suggested by "efficiency." At other times, when it is labour itself that is in view, it is not clear whether "more efficient" means more efficient even in proportion to wages or not. Referring to the iron trade delegation to Germany in 1896, we are informed that "British labour, if more highly paid, was said to be more efficient—in proportion, at least" (p. 72). Those who have read the report will remember that it is by no means clear that British labour in this trade is more highly paid. Professor Chapman's caution leads him to add: "It is somewhat difficult to arrive at an estimate of the comparative levels of wages in the iron and steel industries in England and Germany, on account of the different systems of arranging labour; but it would appear that English and German wages in these industries are not so greatly dissimilar as in most other industries" (p. 73). Even this will suggest to the hasty reader a superiority of English wages which the report itself does not indicate. And yet Lord Brassey, in his summary (p. viii), does not find room even for this amount of qualification. This is the first difficulty. But suppose we have got over it, and know as a fact that English labour is more highly paid, has England an advantage in international competition if the efficiency of its labour is only greater in *proportion*? I can imagine reasons why this might be the case; but it wants arguing.

Again, we find "efficiency" identified with knowledge. Thus:—

"It would not be correct to say that the American master in the engineering industry is a more *efficient expert* than his rival in any other country. Probably the most *highly trained theorist* is the German; and the Englishman is not, as a rule, inferior to the American in respect either of *technical or theoretical requirements*." (The italics have been added.)

"Come now," we say, "that is a comfort, at any rate, for poor old England and Germany!" But no; what is given by one hand is taken away by the other. Thus:—

"But the American engineer is, in addition, alert, pushing, adaptable, resourceful, quick to see and seize opportunities, a thoroughly good buyer and seller and a splendid works manager" (p. 133).

Then are adaptability and resourcefulness, &c., not elements in "efficiency"?

The confusion is further confounded by the appearance of "capacity" on the scene:—

"We cannot conclude that the American workman is more capable than the English workman; rather, we should say, *the spirit of the American's surroundings, the constant movement, and the system in which he works*, are more likely to bring the workman's powers into full exercise than the corresponding conditions in England" (p. 135). Is this meant to cheer us? If so, cannot precisely the same thing be said, *mutatis mutandis*, of a good deal of European, and even of Oriental, labour as compared with English?

Our author frequently refers to Professor Hasbach's articles on English industry in Schmoller's *Jahrbuch*. His readers would do well to glance at the same time at the appendix to one of them, on "Brassey's and Brentano's Teachings as to the Relation of Wages to Output." Professor Hasbach there reminds us how strangely loose and inconsistent are the utterances on this subject to be found in the earlier book on *Work and Wages*. We had some right to expect from the "continuer" of that book an even anxious regard for clarity of conception. For the question is one which cuts to the roots of our industrial life. Mr. Carnegie has repeatedly told us that "automatic machinery is to be credited as the most potent factor in rendering non-essential to successful manufacturing a mass of educated mechanical labour." I do not myself want to agree with him unless I am compelled by the facts. But any one who has stood, for instance, as I have, in a cotton town of New England, and seen the streams of "Armenians" and "Syrians" pouring forth from the railway station to go to work that same day in the mills; or who has wandered among the mines and coking works of Connellsville, and found a bit of Hungary planted on American soil, must have seriously considered whether our reliance on the "efficiency" of the Lancashire operative or the Midland miner is altogether well placed. If the very defects of "inefficient" labour lead, as they so commonly do, to the introduction of labour-saving machinery, how is that going to affect the land which possesses what is in itself a higher type of labour? And this is only one of the questions which the problem suggests.

An example of the tenuity of substance in the book before us—with all its many merits—if we fix our attention on what purports to be its main theme, is furnished by the treatment of Indian competition with Lancashire cottons. It is justly remarked that the recent growth of cotton manufactures in India "calls for a careful examination of the economic forces at present working." This examination takes the form of two pages and a half. Most of this space is occupied by a summary of the conclusions of an investigation made in 1888. It was then found that, in spite of nominally low wages, the labour-cost in India was far higher than in Lancashire. But 1888 was only some fifteen years after "the industrial awakening" of India (p. 152), and sixteen years have since elapsed. In that time there has been a great increase in the

number of spindles, and, what is more significant, there is a "wider resort to fine spinning" (p. 148). Professor Chapman himself tells us:—

"The number of operatives required to manage a given quantity of machinery was—in 1888—five to eight times greater in India than in England, and now it is at least three times greater" (p. 151).

To be safe, let us say that it has decreased from some six times to some four times. Is not this a remarkable development? Our author himself explains it:—

"Enterprise, readiness to face change, power of application and adaptation, and docility to discipline, have been steadily increasing in India" (p. 152).

And this reappears in Lord Brassey's summary (p. xiv) in the words:

"It is said that the Indian operatives are becoming more efficient."

These are fundamental matters, on which I cannot help thinking we ought to have something more than general statements. If there is any definite evidence procurable on these points, it surely ought to be put before us; for if the efficiency of labour is really "steadily increasing in India," in what sense can it be accurate to say that "the state of affairs is not materially different to-day from what it was in 1888?" (p. 150).

It is one of the misfortunes of economics that the "Economy of High Wages," vitally as it bears alike on social reform and in foreign competition, has hitherto been usually treated of by writers whose enthusiasm for causes—with some of which we are certainly all of us in sympathy—has outstripped their scientific caution. And the present book must regretfully be acknowledged to carry the discussion but little further.

W.J.A.

*Report on the Growth of Industry in New York.* viii + 669 pp., 8vo. New York State Department of Labor, 1904.

"Nearly everything that is made anywhere in the United States will be found represented in New York's [the State, not the city] output of manufactured goods." The population was 7,268,894 in 1900, greater than that of Belgium. Its foreign commerce is greater than that of any country save four. The total annual number of "pieces of mail matter handled" is exceeded only in Great Britain, Germany, and France. In the amount deposited in the Savings Banks it is beaten only by Germany. It is the leading State among the United States in many important industries, whether measured by product, capital value, or number employed. Its population has increased nearly thirteen-fold since 1800, and as its density is only one-twenty-seventh of that of Leicestershire, it can increase much more in the future. The net value of its manufactured products has increased ten-fold since 1850. These, and similar facts, are set out in great detail and with lucidity in the report before us. This extraordinary growth is traced mainly to its natural position, as the gateway to Europe on the one side, and to the north central States on the other; "nature" has

erected walls of mountains which enclose and shut in the Mississippi plain on the east and west, and through these barriers has only left three gateways to the commerce of the old world." Of these, the Gulf of Mexico is too distant, and the St. Lawrence is ice-bound in the winter; while the New York opening has long been developed by systems of canals and railways. Its natural resources are limited, but are fully used, and the growing intensiveness of its agriculture is very noticeable. Alongside its water-ways have grown up flourishing towns, manufacturing imported raw material, and passing on the products to New York City, itself of course the greatest manufacturing centre, and beyond. While some doubt must rest on the exact comparability of the earlier with the present statistics, there can be no doubt that this record, which contains a complete industrial census for the State in 1900, will form a very valuable basis for future comparisons. The tables are well and clearly compiled, but the photographic diagrams, of which there are many, are all but illegible; this is the less to be lamented, as in the first two, at least, circles and solid figures are used to represent totals, to which their linear magnitudes (instead of areas or volumes) are proportional.

A.L.B.

*Entstehung und Rückgang des landwirtschaftlichen Grossbetriebes in England.* By Dr. Hermann Levy. vi + 247 pp., 8vo. Berlin: Julius Springer, 1904.

This most admirable book consists of two parts: in the first part the author traces the rise and development of agriculture in England on a large scale (*grossbetrieb*) from 1750 to 1880; in the second part he gives an account of English agriculture at the present time, and points out the directions in which it is developing, or may be expected to develop. The history of English agriculture is very well known; the social and economic effects of inclosures and corn laws have been stated again and again, and we can pass over the first half of our author's work with the statement that it is excellently written, with profound knowledge, great perspicuity, and good sense. Such an account was a necessary prelude to the second half of the book. From the year 1880 onwards the fall in the world's price of wheat, due to the development of new countries and the great improvements in transport, has affected English agriculture considerably, and in particular has made wheat growing on a large scale by farmers who leased farms of large area less profitable than it used to be; the profit must now be looked for in other directions. The high price of wheat, combined with low wages, which existed in the first half of the nineteenth century, was the cause that the demand for meat, butter, eggs, cream, and vegetables was not great. The poorer classes had to subsist mainly on cereals and potatoes; the fall in the price of bread, combined with improving wages, greatly stimulated the demand for agricultural products other than cereals. This increased demand is of profound importance. Since 1880 the production of cereals has lost its former overwhelming importance,

and the production of cattle and agriculture on a small scale (dairy produce, &c.) are bidding fair to become predominant. The small holding, which was economically unsound, though perhaps socially desirable, during the days of the predominance of large farms producing mainly wheat, is now again becoming a sound economic unit.

From 1885 to 1895 the number of farms of 100 to 300 acres has risen from 59,180 to 60,381; those from 50 to 100 acres from 44,893 to 46,570; those from 20 to 50 acres from 61,146 to 62,446; whereas the number of farms of over 1,000 acres has sunk from 565 to 524. Since 1873 the number of allotments has increased by nearly 100 per cent. The social and political causes which, in addition to the economic causes, determine the size of holdings, are ably discussed by Dr. Levy; he rightly sees that many wealthy men purchase land for its social advantages, and not as an economic speculation; but in discussing the effect of the English system of settlements on the free sale of land, he appears to have overlooked not only the Settled Land Acts, 1882 to 1890, but also the fact that before the Settled Land Acts well-drawn settlements usually contained a power of sale. The dislike of small holdings and allotments, which is often manifested by the big landlords or large farmer, is due to the fact that small holdings tend to make the labourer independent, whereas the farmer wants the labourers to be under his thumb. Dr. Levy next proceeds to discuss the economic forces tending to large or small holdings in the cases of (a) cereals, (b) vegetables and fruit, (c) cattle. In some cases agricultural machinery gives a great advantage to large-scale production, in others, as fruit culture and dairy produce, the personal care of the small man seems to favour small-scale production. This portion of the book is perhaps the most interesting of all, since Dr. Levy goes into the most interesting details of the prices of agricultural machinery, the number of horses required to work farms of various sizes, the dislike of labourers to milk cows on Sundays, and many other most instructive points. Into all these want of space forbids us to follow him in detail. As regards agricultural co-operation, he points out that it is much more difficult to make it succeed when holdings of all different sizes are mixed up together. Broadly speaking, Dr. Levy's book gives us a most hopeful impression of English agriculture; the day of the small holding is at hand, and that may have the most excellent social effects; if wheat is no longer so profitable as it was, there is still an immense opening for cattle, fruit, and vegetables; the progress of the working classes during the past fifty years has created the demand which will recreate the small holding. Dr. Levy holds quite clearly that to the Free Trade Policy adopted in 1846 is due the increase of small holdings and the great technical developments of agriculture, which have prevented an agricultural crisis from causing ruin, and which instead have led to new agricultural developments.

Finally, this book has one great fault, there is no index; but in all other respects it is deserving of the highest praise. Dr. Levy wears his learning easily; he writes as a master of a most difficult

subject. He does not skim over the surface of things, but goes beneath to the causes, and, lastly, he gives us plenty of statistics.  
C.P.S.

*The Business Side of Agriculture.* By Arthur G. L. Rogers, M.A. Methuen and Co., 1904. Price 2s. 6d. net.

The first impression conveyed by this little volume, which forms one of a series of "Books on Business," is that the business side of agriculture is very unbusinesslike. It comprises four chapters: I. The farmer and his market; II. Traditional methods of marketing cereals, hops, fruit, and other vegetable produce; III. Traditional methods of marketing live-stock and their bye-products; and IV. Recent developments in the processes of distribution. Mr. Rogers gives many and curious examples of the diversity of practice and the cumbrousness of procedure which prevail in connection with the sale of farm products. The various denominations under which the same kind of commodity are sold is the plague of statisticians. No worse condemnation than this can, in the pages of this *Journal*, be imagined, but incidentally this infinite variety is a serious hindrance to farmers themselves. They are not, as Mr. Rogers justly points out, so lacking in business capacity as those who know them slightly are apt to assume. In his own market and in personal bargaining a farmer can generally hold his own with the smartest buyers, but when, as in these days, his produce is frequently sent to distant markets, the middlemen, with their wider knowledge, get the advantage. The cure for the admitted evil is however not evident, and Mr. Rogers does not attempt to prescribe one, though he suggests co-operation as a palliative. The power of the State to interfere is limited. It may be easy to prove, for instance, that to sell cattle by live weight, as in the United States, would be a distinct improvement, but it is another matter to compel every man to sell his beasts by a system of which he does not see the benefit. Similarly, if one market deals in wheat in units, mis-called bushels, of 63 lbs., and another in units of 60 lbs., it may be maddening for comparative purposes, but it is not easy to prevent. Market customs are survivals from the middle ages in many cases, but they are very tenacious of life. The power of combination is, as Mr. Rogers states, the only force competent to effect a real reform, and it is in this direction we must look for improvements in methods of marketing. R.H.R.

*Agricultural and Pastoral Prospects in South Africa.* By Owen Thomas. Archibald Constable and Co., 1904. Price 6s.

The period of glib generalisation about the future of South Africa which immediately followed the close of the war has been succeeded in the public mind by a more chastened spirit. We are beginning to recognise something of the complexity and difficulty of the problem which lies before us in the development of our new possessions. This book is a valuable contribution to the accumulating body of facts and opinions which will assist in forming just

views on the subject. It has nothing, or very little, to say about gold or diamonds, but it has much to say about crops and live stock. The facts which the author gives are the result of extensive personal observation. He appears to have pursued his mission of investigation into all parts of South Africa, and to have examined the conditions of farming with painstaking care. Col. Thomas had the advantage not only of long personal experience of agriculture in this country, but also of a wide knowledge of its manifold circumstances acquired as a member of the Royal Commission on Agriculture in 1892-94. His opinions, therefore, which are expressed very frankly, must be taken as those of an expert. His conclusion appears somewhat sweeping: "From actual observation (during three-and-a-half years) of facts and conditions, and from careful study of the agricultural problem on the spot, I am of opinion that the agricultural prospects of South Africa are unpromising." This, however, is not quite so condemnatory as at first sight appears, the term "agricultural" being used in the restricted sense of corn-growing, and he proceeds: "Intending settlers will do well to expend their energies in other directions, such as stock-farming, fruit, cotton, rubber, sugar, tea, castor oil, and tobacco." Col. Thomas certainly adduces cogent reasons for his belief that wheat-growing, at any rate, is not likely to be profitable on an extended scale, and he quotes the report of two experts who were sent to Australia, and returned with the confident belief that South Africa could not compete in this respect with the great Commonwealth. The author is, however, a little pessimistic on the subject of soil exhaustion. He seems to suggest that corn-growing, even under a system of rotation, necessarily exhausts the land, at any rate if only artificial manures are used. The lessons of Rothamsted hardly support this view, while the experience of such farms as Sawbridge-worth, where wheat has been continuously grown for many years, seems contradictory. The point, however, is immaterial, as it would, no doubt, in practice be too costly to attempt arable farming in South Africa with artificial manures alone. Col. Thomas recommends stock-raising as the staple industry, so to speak, of South African farmers, although he urges that a condition precedent to its success is the fencing of the country, and the eradication, or at least the control, of diseases of animals. He does not think there is, or will be, much opening for the introduction of breeds of live-stock from Great Britain, and he gives sound reasons for the belief that the best of the native herds should be adopted and systematically improved. It would seem probable, however, that their amelioration might be materially assisted and hastened—as in so many other countries—by judicious crossing with suitable imported stock, and Col. Thomas favours the Herefords as the best breed of cattle for this purpose.

It is quite impossible here to give any adequate idea of the scope of this most interesting volume, which should be read by anyone who desires to be informed on the subject of South African development. Col. Thomas discusses many points, and offers his conclusions freely and candidly. He condemns the system of

land settlement, on its original lines at any rate, with much vigour, and states his belief that a leaven of English distributed among the Boers would result not in the Anglicising of the Boer, but in the Boerising (if the word be allowed) of the English. He has a strong belief in Rhodesia and its agricultural development, and advises Englishmen going to South Africa to choose that colony if possible. He insists strenuously on the evil effects of the Boer system of subdivision of the land, and incidentally eulogises the English law of primogeniture. The book is not the last word by many on the subject of which it treats, but it is an essential contribution to it.

R.H.R.

*Agricultural Handbook and Diary*, 1905. Edited by Messrs. Adeane and Richardson Carr. The County Gentleman, Limited. Price 1s.

This, as its title implies, is divided into two parts, of which the handbook occupies the first 71 pages, and the diary the remainder. Of the latter little need be said, save that it leaves convenient spaces for daily entries, and commemorates various dates by notices of horse and cattle shows and race meetings, in place of the customary notices of saints.

The handbook contains a series of eighteen short articles on subjects relating to agriculture, which recount a "tale of woe" wherever English agriculture is concerned. To the statistician the most useful articles are those formed of extracts from Returns of the Board of Agriculture, "An Agricultural Summary of the Year, Michaelmas, 1903-04," by W. E. Bear, and "The Agricultural Changes of a Generation," by R. H. Rew. The "Agricultural Summary" gives a short statistical history of agriculture in 1903-04. Mr. Rew's article supplies a striking summary of figures in illustration of the three facts which he remarks "may be said to illustrate and epitomise the agricultural history of the past thirty-five years," viz., "a reduction in the extent of land under wheat and in the number of sheep, and an increase in the number of cattle . . ." A map inserted at the end of the diary illustrates in graphic form the figures with which the agricultural articles in the handbook deal. To all those interested in agriculture who are keepers of diaries this one may be safely recommended.

*Statistical and Economic Articles in Recent Periodicals.*

UNITED KINGDOM—

*Economic Journal*. September, 1904—Britain's Place in Foreign Markets: A. W. Flux. Economic Theory and Fiscal Policy: L. L. Price. Monopoly and Consumer's Surplus: A. S. Pigou.



## UNITED KINGDOM—Contd.

*Economic Journal.* September, 1904—Contd.

Currency Reform in Mexico and China: *L. Darwin*. Taxation of Land in Australasia: *Miss A. F. Dodd*. Tests of National Progress: *A. L. Bowley*. Japanese Finance: *J. Soyeda*.

[*Britain's Place in Foreign Markets*.—This article is a continuation of those which appeared in the *Economic Journal* in 1894 and 1899. Three triennial periods are taken for comparison, 1889-91, 1894-96, 1899-1901, and the foreign trade of the four "Rivals,"—&c., the United Kingdom, Germany, France, and the United States—specially considered in respect of: Table I the variations in the percentage shares of the total European imports originating from each in the three periods considered. Similar figures given in regard to the percentage shares of each of the "Rivals" during the same periods in the import trade of Table II Egypt, Japan, Table III British possessions. Table IV shows imports of Neutrals (for explanation see text), United Kingdom, Germany, France, and United States, from the Rivals. Table V gives figures for United Kingdom, United States, France, and Germany of average exports, and exports to (and corresponding imports of) enumerated Neutrals and Rivals respectively in the three triennial periods. Table VI illustrates the distribution of the British export trade.

*Taxation of Land Values in Australasia*.—This method of taxation tried in New Zealand, Victoria, New South Wales, and South Australia with direct object of preventing accumulation of large estates in few hands. Its success.

*Tests of National Progress*.—Best tests of national prosperity, measurements of average wages, average taxpaying income, amount of unemployment interpreted by changes of purchasing power of money, and confirmed by records of consumption of necessities. These various tests are statistically examined, with aid of index number, over a period 1860-1901.

*Letter from Japan*.—Contains brief account of the War Budget and present position of National Debt.]

*Economic Review.* October, 1904.—The Rural Exodus: *Rev. Dr. F. W. Bussell*. Some Social Aspects of Spain: *Miss E. A. Barnett*. The Housing of Cambridge: *Henry Cayley*. The Choice of Employment for Boys: *Rev. Spencer J. Gibb*. The Co-operative Congress at Budapest: *Henry W. Wolff*.

[*The Housing of Cambridge*.—An investigation undertaken by a special Housing Committee formed from the two local branches of the Christ an Social Union. Chief points investigated: number of living rooms, number of bedrooms, number of occupants (a) per room (b) per bedroom. House in bad structural repair. Water supply, and sanitary arrangements. Rents. Short description of parishes dealt with, and conclusions of Committee respecting practicable measures of reform.]

*Journal of Institute of Actuaries.* October, 1904.—On the Valuation of Whole Life Industrial Assurances, with Allowance for Lapses: *Thomas G. Ackland* and *James Bacon*. On Life Premium Book-keeping: *James Chatham*.

*Journal of Institute of Bankers.* October, 1904.—Relative Influence of this Country's Free Gold Market and her Free Trade Fiscal Policy in Bringing about her Financial Predominance; and the Effects to be anticipated should Preferential Trading with her Colonies and Dependencies be adopted: *John William Hartley*.

*Bankers' Magazine.* 1904—

August—The Circulating Medium in France. Digitized by Google

## UNITED KINGDOM—Contd.

*Bankers' Magazine*, 1904—Contd.

*September*—Is our Investment Capital Decreasing? : *W. R. Lawson*.

*December*—Improved position of Cotton.

[*The Circulating Medium in France*.—An account of an official inquiry instituted on 15th October, 1903, to investigate the composition of the circulating medium. Amount examined was 11,052,436*l*. Proportion of bank notes, gold coin, &c. Proportion of gold coin in various departments. Monetary circulation of the department of the Seine. Gold and silver specie classified according to nationality. Silver 5-franc pieces. Divisional silver money and smaller coin.]

*Surveyors' Institution. Transactions*, 1904-05. *Part 1*—Opening Address as President of the Surveyors' Institution, on Housing of the Working Classes : *Herbert T. Steward*.

*Surveyors' Institution. Professional Notes. Vol. 12. 1904—*

*Part 3, March*—Reply to Criticism of his Paper on "The Burden of Taxation on our Railways" : *F. O. Lyons*.

*Part 4, July*—The Land Values Assessment and Rating Bill : *W. Sturge*.

*Journal of the Board of Agriculture*, 1904—

*September*—The Quality of English Wheat : *A. D. Hall*.  
Wheat Growing in Argentina.

*October*—Renting of Farm Land by Poultry Keepers : *E. Bracon*.

*November*—Planting Fruit Trees and Bushes : *William E. Bear*.

Raising and Fattening Geese for Market : *H. de Courcy*.

Afforestation of Catchment Areas by Local Authorities.

Co-operative Granaries in Germany.

*Journal of the Department of Agriculture and Technical Instruction for Ireland. October*, 1904—Early Potato Growing : *M. G. Wallace*. The Horse in Ireland. Agricultural Co-operation in Germany : *H. de F. Montgomery*. An Investigation in County Wexford of a disease in Young Cattle : *J. H. Norris*. Butter-making and the Butter Trade in the Netherlands. Pig Breeding in Ireland. Commercial Education.

*Transactions of Manchester Statistical Society, Session 1903-04*—Productivity, Protection, and Integration of Industry : *Frederick Mertens*. History and Development of Manchester School Board : *C. H. Wyatt*. Some Problems of Local Government : *F. Brocklehurst*. The Work of the British Cotton Growing Association : *J. Arthur Hutton*. Value and Comparability of English and German Foreign Trade Statistics : *Barnard Ellinger*. The Garden Village of the Small Holdings Association : *James Long*.  
*Proceedings of Royal Philosophical Society of Glasgow. Vol. 35, 1903-04*—The Development of Electrical Science during the Nineteenth Century, and the Electro-Magnetic Theory of Light. (Centenary Lecture) : *Andrew Gray*. The Fiscal Policy : *William Smart*. The Historical Development of the Different Systems of Education in the Highlands : *Magnus Maclean*. Some Developments in Chemical Theory during the Nineteenth Century. (Centenary Lecture) : *G. G. Henderson*. Some Observations on Primitive and Early Markets and Fairs :

**UNITED KINGDOM—Contd.**

*Proceedings of the Royal Philosophical Society of Glasgow—Contd.*

Sir James D. Murwick. The Treatment of the Criminal and Offender: James Devon. Advances in Chemical Industry during the Nineteenth Century. (Centenary Lecture): George T. Beilby. The Clear Facts of the Commercial Situation, and the Divergent Conclusions drawn from them: W. J. Ashley. Developments in the Means of Communication by Sea during the Nineteenth Century. (Centenary Lecture): Robert Caird. Some Advances in Medical Science during the Nineteenth Century. (Centenary Lecture): Robert Muir. The Future of Japan from the Geographical Point of View: Sampachi Fukuzawa. Age Incidence in Zymotic Diseases: John Brownlee.

**UNITED STATES—**

*American Journal of Sociology.* November, 1904—The Subject-Matter of Sociology: Albion W. Small. Has Illinois the best Laws in the Country for the Protection of Children? Florence Kelley. Definition of a Social Policy relating to the Dependent Group: Charles Henderson. The Problem of Poverty: Emil Münsterberg. Metaphysical Elements in Sociology. 1: Philip H. Fogel. Education in the South. 1. Before the War: May Wood Simons. The Position of Women in Early Civilization: Edward Westermarck.

*Annals of the American Academy of Political and Social Science—*September, 1904—Arbitration of Industrial Disputes: E. E. Clark. The New Unionism—The Problem of the Unskilled Worker: William E. Walling. Political Action and Trade Unionism: W. Macarthur. Compulsory State Insurance of Working Men: I. M. Rubinow. Women's Place in Industry and Labour Organizations: Sophie Yudelsohn. Street Railways in Philadelphia since 1900: Thomas Conway, Junr. Public Ownership and Low Rates: Frank Parsons.

*Journal of Political Economy.* September, 1904—Marginal Units in the Theory of Distribution: John A. Hobson. The Panama Canal Payment: Maurice L. Muhleman. The Political Significance of Reciprocity: W. Jett Lauck. The "Trust" Problem: Harry Earl Montgomery.

[*The Panama Canal Payment.*—Description of method of payment of \$41,000,000 for rights of Panama Canal Company and acquirement of territory in Panama, and effect on world's exchange market.]

*Quarterly Journal of Economics.* November, 1904—Labor Conditions in Meat Packing, and the Recent Strike: John R. Commons. English Customary Tenure in the Tudor Period: Alexander Savine. The Fundamental Notion of Capital, once more: Charles A. Tuttle. Industrial Pooling Agreements: Wallace E. Belcher. The National Transcontinental Railway of Canada: W. L. Mackenzie King.

*Quarterly Publications of American Statistical Association.* June, 1904.—The Negro as a Peasant Farmer: Katharine Coman. Census Statistics of Special Classes: John Koren.

UNITED STATES—*Contd.*

*Transactions of Actuarial Society of America.* No. 31, 1904.—Principles which should determine the Maximum Single Risk, and the Acceptance of exceptional Classes of Risks: *Walter S. Nichols*. Notes on a Factor, hitherto overlooked, of the Rate of Interest: *Charlton T. Lewis*. An Experiment with the Specialized Investigation: *Itufus W. Weeks*. Frequency Curves and Moments: *Robert Henderson*. The Decline in the Birth-rate in New South Wales: *Richard Teece*.

*Yule Review.* November, 1904—Why there has been no Financial Crisis: *Alexander D. Noyes*. The Introduction of the Linotype: *George E. Barnett*. Census Statistics of the Negro: *Walter F. Willcox*. The Political Machine: *James R. Trowbridge*. Workmen's Insurance in Germany: *N. Pinkus*.

*Monthly Summary of Commerce and Finance, 1904—*

*July*—Annual Review of Foreign Commerce of United States, for fiscal year ending 30th June, 1904, and Summary of Internal Commerce. Immigration into the United States, during July, 1903 and 1904. Commercial Notes on Financial and Commercial Conditions throughout the World. Internal Commerce for July, 1904. Financial Tables. Prices of Leading Articles during 1903-04. Foreign Commerce of the United States for July, 1904, and seven months ending July, 1904. Commerce of Non-contiguous Territories of the United States for July, 1904, and seven months ending July.

*August*—Imports and Exports of the United States, 1835-1904, and Receipts and Expenditure of the United States Government, 1856-1904. Reciprocity Treaties and Agreements of the United States since 1850.

*September*—Annual Review of the Commerce of the United States, for year ending 30th June, 1904.

*Bulletin of the Bureau of Labor.* No. 53, July, 1904—Agreement between Employers and Employees. Wages and Cost of living.

## AUSTRIA—

*Statistische Monatschrift.* 1904—

*August*—Ergebnisse des Oesterreichischen Unfallstatistik, 1897-1901: *Karl Kögler*. Der Zwischenverkehr der im Reichsrath vertretenen Königreiche und Länder mit den Ländern der ungarischen Krone in Jahre 1902: *Rudolf Krickl*. Die Bevölkerung der Vereinigten Staaten: *H. Fehlinger*.

*September—October*—Die Ergebnisse der Berufserhebung bei der Volkszählung vom 31 Dezember, 1900: *Franz v. Meinzingen*. Studentenstiftungen des Jahres 1903: *Alfred Lorenz*. Die Fischerei an der adriatischen Küste Oesterreichs im Jahre 1901-02: *Karl Kraft*.

## FRANCE—

*Annales des Sciences Politiques—*

*September*—Les Anglais au Thibet: *Edouard Payen*. Un précurseur de Talleyrand: Choderlos de Laclos et l'alliance anglaise (1789-90): *Lucien Lison*. Lois et traditions coloniales de la France d'autrefois: *Christian Schefer*.

## FRANCE—Contd.

*Annales des Sciences Politiques—Contd.*

*November*—Patrons et ouvriers aux États-Unis: *A. Raffalovich*.

Les intrigues contre Napoléon I<sup>er</sup> dans le nord de l'Empire en 1814-15: *P. Fauchile*. Le Rachat des Chemins de Fer en Suisse: *Paul Henry*. Le Contrat Collectif de Travail: *Ed. Cailleux*. La Vie politique en Allemagne (1903-04): *J. P. Armand Hahn*. La Vie politique en Angleterre (1903-04): *M. Caudel*. La Vie politique aux États-Unis (1903-04): *A. Viallate*. La Vie politique en Extrême-Orient (1903-04): *M. Courant*.

*Journal des Economistes, 1904—*

*October*—L'Expulsion des Morisques d'Espagne: *E. Castelot*. La Protection des Faibles: *H. Bouët*. Le Mouvement Financier et Commercial: *Maurice Zablet*. Le Douzième Congrès du Crédit Populaire: *G. François*.

*November*—Le régime futur du Gaz à Paris et le projet de régie directe: *E. Letourneur*. Les Français du Canada à L'Exposition de Saint-Louis: — *Laborer*. La Ligue des consommateurs à New York: *Yves Guyot*. Le Régime protectionniste, c'est la diète: *E. Martineau*. La Spéculation: *Frédéric Passy*.

*Journal de la Société de Statistique de Paris, 1904—*

*October*—Parallélisme des mouvements de Population dans les différents Pays de l'Europe: *Dr. J. Bertillon*.

*November*—Statistique de l'enseignement primaire: *E. Levasseur*. Les aspects arbitraires de l'interpolation des séries statistiques: *R. Benini*. Contribution à l'étude des doubles emplois dans l'évaluation des biens en France: *C. Bresson*.

[*Parallélisme des Mouvements de Population dans les différents pays de l'Europe*.—General rule that birth-, marriage-, and death-rates vary together in the same direction. Confirmatory evidence for this rule collected from vital statistics of European countries, and also displayed graphically. Mortality and latitude. Growth of populations of European countries. Position of France.]

*La Réforme Sociale, 1904—*

No. 19—La Commune Rurale et la Paroisse: *Eugène Nolent*. La Vie économique et sociale dans les milieux ruraux de l'Ouest: *Isidore Pasquier*. Le Syndicat Agricole et son action sociale: *Emile Duport*.

No. 20—L'Histoire politique et l'Histoire économique: *Henry Joly*. La Guerre Russo-Japonaise et le Mercantilisme: *A. Favière*.

No. 21.—Restrictions apportées aux libertés locales depuis un quart de siècle: *Henry Taudière*. Le Roi: *Frantz Funck-Brentano*. La dépopulation en Normandie, et principalement dans les Campagnes: *Jean Guillouard*. Un Péril étatiste: La loi du 27 Juin, 1904: *Alfred des Cilleuls*.

No. 22—L'Héritage rural et la Famille française: — *Flour de Saint-Genis*. L'Origine de l'Arrondissement: *Ch. Lescœur*. A propos de la Criminalité de la Normandie: *Henry Joly*.

## FRANCE—Contd.

*La Réforme Sociale, 1904—Contd.*

No. 23—Les Vicissitudes de la Vie provinciale en France depuis le xvii<sup>e</sup> Siècle: *Alfred des Cilleuls*. L'Industrie Domestique en Allemagne, et le Congrès de Mars, 1904: *Constantin Bresciani*. L'Exode des Campagnards vers les Villes dans le Département de l'Ain: *Henri de Boissieu*.

*Revue d'Économie Politique, 1904—*

*August—September*—Sur la rente des consommateurs. Une nouvelle démonstration d'une proposition concernant le rapport entre prix et consommation (*concluded*): *Bela Ambrozovics*. La Classe moyenne en Hongrie: *Joseph de Mailath*. Un précurseur de Malthus: *Giammaria Ortès*: *Réné Gonnard*.

*October—November*—Retraites ouvrières et risque professionnel: *A. Boissard*. Influence de la monnaie et du crédit sur les prix: *Laurent Dechesne*. Le communisme agraire de Robert Owen: *Edouard Dolléans*. La co-opération au Danemark: *O. Rosenqvist*. Un chapitre de l'histoire des chemins de fer américains, Henry C. Carey et la Camden and Amboy Railroad and Delaware and Raritan Canal Co.: *André E. Sayous*.

*Bulletin de Statistique et de Législation comparée, 1904—*

*September*—Produits des contributions indirectes pendant le 1<sup>er</sup> semestre des années 1904 et 1903. La Caisse nationale des retraites pour la vieillesse en 1903. La réforme des impôts directs en Wurtemberg (*concluded*).

*October*—Les rentes perpétuelles et la rente 3 pour cent amortissable au 1<sup>er</sup> Janvier, 1904. Les octrois en 1903.

## GERMANY—

*Archiv für Sozialwissenschaft und Sozialpolitik. Neue Folge. 1904.*

*Band xix, Heft 3*—Agrarstatistische und sozialpolitische Betrachtungen zur Fideikomissfrage in Preussen: *Max Weber*. Dreizehn Jahre sozialen Fortschrittes in Neuseeland: *Richard H. Hooper*. Die neuere Kinderschutzgesetzgebung in Deutschland und in Grossbritannien: *Stephan Bauer*. Die fortschritte auf dem Gebiet des Arbeiterschutzes in den Niederlanden: *Ph. Falkenburg*. Die neue Arbeiterpartei in England: *Eduard R. Pease*. Wohnbedarf und Kinderzahl: *Henriette Fürth*. Die Entwicklung der italienischen Nationalökonomie in jüngster Zeit: *Achille Loria*. Zur Literatur über die Wohnungsfrage: *Hugo Lindemann*.

*Band xx, Heft 1*—Die protestantische Ethik und der "Geist" des Kapitalismus: *Max Weber*. Die genossenschaftliche Bewegung in Belgien und ihre Resultate: *Louis Bertrand*. Die englisch-schottische Bodenleihe: *Dr. Adolf Weber*. Arbeitserkammern. Von Baurat (früher Fabrikinspektor): *Dr. K. Fuchs*. Die Arbeitsversicherung in Ungarn: *Dr. Robert Morschner*.

## GERMANY—Contd.

*Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft* (Schmoller's). Heft 4, 1904—Schnellverkehr und Tarifreform: *Carl Bullocl*. Deutsche Seefahrten nach Sudamerika: *Christian Eckert*. Die Nacht in Russland: *A. Manuiloff*. Die Deutschen Banken im überseeischen Verkehr: *Richard Rosendorff*. Die Poddelskischen Postreformen und ihre finanziellen Ergebnisse: *Wilhelm Triest*. Die Behördenorganisation im ehemaligen Kurhessen nach der Reform von 1821 und ihre Entwicklung in vorpreussischer Zeit: *Albert Lotz*. Die Wirkungen des Gesetzes über den Unterstützungswohnsitz. Un Dresden Material erörtert: *Karl Seutemann*. Der Preussische Getreidestaffeltarif in seiner Wirkung auf Posen u. Bayern: *Ernst Behre*. Die Einlösung der Realgewerbe Wiens. Ein Beitrag zur Geschichte der österreichischen Gewerbepolitik: *Karl Pröbner*. Die deutsche-rumänischen Handelsbeziehungen: *Jon. J. Raducanu*. Die Amerikaner: *Gustav Schmoller*. Zur Verständigung über das mittelalterliche Zunftproblem: *Paul Sander*.

*Jahrbücher für Nationalökonomie und Statistik* (Conrad's), 1904—

September—Das Steigen des Rupienkurses nach der Aufhebung der indischen Silberwährung und seine Ursachen. (Fortsetzung und Schluss): *Otto Heyn*. Zur Besteuerung der Aktiengesellschaften in Oesterreich: *Erwin Steinitzer*. Die wirtschaftliche Gesetzgebung der deutschen Bundesstaaten im Jahre 1903. (Fortsetzung): *Albert Hesse*. Der Scheck- und Clearingverkehr des k.k. österreichischen Postsparkassenamtes: *Eduard Tobisch*. Ueber die weitere Entwicklung der kommunalabgaben in Preussen: *Wilhelm Horn*.

October—Der Streit um den Charakter der altgermanische Sozialverfassung in der deutschen Literatur des letzten Jahrzehnts: *Max Weber*. Zur Geschichte der Agrarkrisen, eine Studie über den Verlauf der landwirtschaftlichen Depression in den östlichen Teilen der Vereinigten Staaten: *Hermann Levy*. Die wirtschaftliche Gesetzgebung der deutschen Bundesstaaten im Jahre 1903. (Fortsetzung und Schluss): *Albert Hesse*. Die sozialen Ansichten Johann Heinrichs von Thünen: *F. Lifschitz*. Die Arbeiterwohlfahrts-einrichtungen der Firma Gebr. Stumm in Neunkirchen: *Gurt Schlenther*. Die Bedingungen der Erwerbung des Doktorgrades auf deutschen Universitäten auf Grund einer nationalökonomischen Dissertation: *W. Kühler*. Studien zum landwirtschaftlichen Genossenschaftswesen in Dänemark: *Heinrich Pudor*.

*Zeitschrift für die gesamte Staatswissenschaft*. Heft 4, 1904—Die Lehre vom gerechten Preis in der Scholastik: *R. Kaulla*. Zur Frage der Errichtung eines obersten Rechnungshofes für das Königreich Württemberg. Mit besonderer Berücksichtigung der bestehenden Einrichtungen im Königreich Bayern und Sachsen (Fortsetzung): *O. Reinhard*. Zur Frage der Besitzwechsel-, Hypothekar-, sowie Bodenpreis- und Bodenwertstatistik. III. Die objektive Möglichkeit einer Berücksichti-

GERMANY—*Contd.**Zeitschrift für die gesamte Staatswissenschaft—Contd.*

gung der Einzelmomente in den fraglichen Statistiken: *F. W. R. Zimmermann*. Borsengesetznovelle von einem Bankbeamten. Ueber das zahlenrechte Wählen von Vertretungskörpern: *F. Linke*. Die Gemeindesteuerreform in Württemberg: *F. Stumpff*.

*Zeitschrift für Socialwissenschaft, 1904—*

*Heft 10*—Der Wohnungsmarkt unter der Herrschaft der privaten Bauspekulation: *L. Pohle*. Misstände des Strafvollzugs: *G. von Rohden*. Zur Würdigung der historischen Schule der Nationalökonomie. VI. Ein Wort zur Verteidigung Roschers: *Georg von Below*. Einheimische und Zugezogene in den Grossstädten: *Friedrich Prinzing*.

*Heft 11*—Indische Eheverhältnisse: *H. Fehlinger*. Marx-Studien: *T. G. Masaryk*. Die unehelichen Geburten von Frankfurt a. M.: *Othmar Spann*. Zur Würdigung der historischen Schule der Nationalökonomie. VII. Schmollers "Schule": *George v. Below*.

*Vierteljahrshefte zur Statistik des Deutschen Reichs. Heft 3, 1904—* Die Finanzen des Reichs und der deutschen Bundesstaaten. Zollbegünstigungen der Weinhändler, 1903. Dampfkessel-Explosionen, 1903. Schiffsunfälle an der deutschen Küste, 1898-1902. Anbauflächen der hauptsächlichsten Fruchtarten im Juni, 1904.

*Zeitschrift des K. Preuss. Statistischen Bureaus, Abteilung 2, 1904—* Zur Methodik der Statistik des Volkseinkommens und Volksvermögens. Mit besonderer Berücksichtigung der Steuerstatistik: *Adolph Wagner*. Die Abhängigkeit der Ernte von den Witterungsfaktoren: *P. Holdefleiss*. Die Ergebnisse der Warenhaussteuer-Veranlagung in Preussen in den Jahren 1901 bis 1903: *F. Kuhnert*.

## ITALY—

*Giornale degli Economisti, 1904—*

*October*—Sul modo di ricavare la Periodicità settimanale di un Fenomeno di cui son date le variazioni solo per mesi: *R. Benini*. Sulla prescrizione dei biglietti di stato e di banca: *A. Gasparotto*. L'assicurazione obbligatoria per la Maternità: *U. Gobbi*. La questione del Vino meridionale: *A. Bertolini*. La speculazione e gli antichi trattatisti: *E. Sella*. La popolazione dello Stato Romano nel secolo xvii: *F. Corridore*.

*November*—Della natura logica dei problemi terminali dell'Economia Politica: *E. Sella*. Sull' istituzione di un ispettorato del lavoro: *C. Dragoni*. Sulle Zone Franche doganali: *V. Giuffrida*. La situazione finanziaria del Comune di Roma: *L. Nina*. La popolazione dello Stato Romano nel secolo xviii: *F. Corridore*.



## ITALY—Contd.

*La Riforma Sociale*, 1904—

September—Sui rapporti fra Trust e Protezionismo: *Cesare Jarach*. Un Problema della Vita Italiana: *Pietro Manfrin*.

La Protezione agli Emigranti in Inghilterra: *Giuseppe Prato*.

October—November—Contribuzione alla Storia e Statistica dei Salari Industriali in Italia nella seconda metà del Secolo xix: *Alberto Geisser* and *Effren Magrini*. Per la pubblicazione dei bilanci, conti e spogli degli Stati della Monarchia Piemontese. Relazione al Re del Ministro del Tesoro: *Luigi Luzzatti*. Il bilancio Finanziario della Prussia: *Federico Flora*.

*Rivista Italiana di Sociologia*, 1904.—July—August—Sociologia e storia: *A. D. Xenopol*. La pretesa decadenza delle società contemporanee: *G. Marpillero*. Agricoltura e pastorizia in Sardegna nel tramonto del feudalismo: *U. G. Mondolfo*. Il sistema monetario e le classi sociali nel Medio Evo: *N. Rodolico*. Sullo svolgimento storico della proprietà fondiaria in Isvezia: *N. Tamassia*.

## RUSSIA—

*Bulletin russe de Statistique financière*. Année 1904. Livraison 1— Les réserves latentes du budget russe. Principaux éléments de recette des Douanes, 1898-1903. Caisses d'épargne, renseignements divers. Chemins de fer, recettes des années 1903 et 1903, &c. Le platine et la statistique du platine. Monopole des spiritueux, statistiques diverses.

## INTERNATIONAL—

*Bulletin de l'Institut International de Statistique*. Tome xiv, Livr. 2, 1904—Flächeninhalt und Bevölkerung Europas: *F. von Juraschek*. Schlussfolgerung aus der Abhandlung über den "Flächeninhalt und die Volksdichtigkeit Europas": *F. von Juraschek*. Die Statistik der äusseren Wanderungen: *G. von Mayr*. La statistique internationale comparée des charges fiscales qui pèsent en divers pays sur les commerçants et les industriels: *Alfred Neymarck* et *Moron*. Die Methode der Armenstatistik: *E. Mischler*. Du meilleur mode à indiquer au point de vue statistique international pour la confection des bilans des sociétés anonymes: *Alfred Neymarck*. La statistique internationale des valeurs mobilières: *Alfred Neymarck*. Programme pour une statistique internationale de l'enseignement supérieur: *Charles F. Ferraris*. Stichproben-Erhebungen in der Zwischenzeit zwischen grossen Vollerhebungen längerer Periodizität: *P. Mayet*. Rapport préliminaire de la Commission de la Répercussion des Droits de Douane: *A. Raffulovich*. The Retro-Active Influence of Duties upon Imports: *E. Atkinson*. De la Répercussion des Droits de Douane: *Edm. Nirolai*. L'Incidence des Droits de Douane: *M. Lerasseur*. Mémoire sur la Répercussion des Droits de Douane: *M. D. Zolla*. Répercussion des Droits de Douane: *Yves Guyot*. L'Incidence des Droits de Douane: *P. Des Essars*. Note sur les écarts de

INTERNATIONAL—*Contd.**Bulletin de l'Institut International de Statistique—Contd.*

prix observés entre les cours du marché intérieur et du marché étranger aux États-Unis et en Allemagne: *A. Raffalovich*. Über Bedeutung und Aufgaben der Brandstatistik: *E. Blenck*. Die Sterblichkeit der Grossstädte: *C. Ballod*. Über die Methode der "standard population": *L. von Bortkiewicz*. Quelques considérations sur l'utilité d'une statistique internationale des caisses d'épargne: *A. Neymarck*. Zur internationalen Gesetzgebung, Verwaltung und Statistik des Sparkassenwesens: *G. Ecert*.

VI.—*Quarterly List of Additions to the Library.*

*Additions to the Library during the Quarter ended 15th December, 1904, arranged alphabetically under the following heads:—(a) Foreign Countries; (b) India and Colonial Possessions; (c) United Kingdom and its Divisions; (d) Authors, &c.; (e) Societies, &c. (British); (f) Periodicals, &c. (British).*

The Society has received, during the past quarter, the current numbers—either quarterly, monthly, or weekly—of the periodical official publications dealing with the following subjects:—

**Consular Reports**—From United States and United Kingdom.

**Labour Reports, &c.**—From Austria-Hungary, Belgium, France, Germany, Italy, United States, New York State, Canada, New Zealand, and United Kingdom.

**Trade Returns**—From Argentina, Austria-Hungary, Belgium, Bulgaria, China, Denmark, Egypt, France, Germany, Greece, Italy, Mexico, Netherlands, Norway, Roumania, Russia, Spain, Sweden, Switzerland, United States, India, Canada, and United Kingdom.

**Vital Statistics**—From Argentina, Egypt, Germany, Italy, Netherlands, Roumania, Switzerland, United States (Connecticut and Michigan only), Queensland, South Australia, and United Kingdom.

**Vital Statistics of following Towns**—Buenos Ayres, Buda-Pesth, Brünn, Prague, Brussels, Copenhagen, Berlin, Bucharest, Moscow, Madrid, London, Manchester, Dublin, Edinburgh, and Aberdeen.

The Society has received during the past quarter the current numbers of the following unofficial Periodicals and Publications of Societies, &c., which are arranged under the Countries in which they are issued:—

**Denmark**—Nationalökonomisk Tidsskrift.

**France**—Annales des Sciences Politiques. Économiste Français. Journal des Économistes. Monde Économique. Polybiblion, Parties Littéraire et Technique. Réforme Sociale. Le Rentier. Revue d'Économie Politique. Revue de Statistique. Journal de la Société de Statistique de Paris.

**Germany**—Allgemeines Statistisches Archiv. Archiv für Sozialwissenschaft und Sozialpolitik. Deutsche Oekonomist. Jahrbuch für Gesetzgebung, Verwaltung, und Volkswirtschaft. Jahrbücher für Nationalökonomie und Statistik. Zeitschrift für die gesamte Staatswissenschaft. Zeitschrift für die gesamte Versicherungs-Wissenschaft. Zeitschrift für Socialwissenschaft. Mittheilungen aus der Handelskammer Frankfurt a. M.

**Italy**—L'Economista. Giornale degli Economisti. Rivista Italiana di Sociologia. Riforma Sociale.

**Sweden**—Ekonomisk Tidskrift.

**Switzerland**—Journal de Statistique suisse.

**United States**—American Journal of Sociology. Banker's Magazine. Bradstreet's. Commercial and Financial Chronicle, with supplements. Engineering and Mining Journal. Journal of Political Economy. Political Science Quarterly. Quarterly Journal of Economics. Yale Review. American Academy of Political and Social Science, Annals. American Economic Association, Publications. American Geographical Society, Bulletin. American Statistical Association, Quarterly Publications. American Philosophical Society, Proceedings and Transactions. Columbia University, Studies in History, &c.

**India**—Indian Engineering. Asiatic Society of Bengal, Journal and Proceedings.

**Canada**—The Chronicle: Insurance and Finance.

**New Zealand**—Government Insurance Recorder. Trade Review and Price Current.

**United Kingdom**—The Accountant. Accountants' Magazine. Athenæum. Automobile Club Journal. Australian Trading World. Bankers' Magazine. Broomhalls' Corn Trade News. Browne's Export List. Colliery Guardian. Commercial World. Economic Journal. Economic Review. Economist. Fireman. Incorporated Accountants' Journal. Insurance Record. Investors' Monthly Manual. Investors' Review. Joint Stock Companies' Journal. Labour Co-partnership. Licensing World. Local Government Journal. Machinery Market. Nature. Navy League, Journal. Policyholder. Post Magazine. Produce Markets' Review. Public Health. Publishers' Circular. Sanitary Record. Shipping World. South American Review. Statist. The Times. Tuberculosis. West Africa. Anthropological Institute, Journal. Cobden Club, Leaflets. East India Association, Journal. Howard Association, Leaflets, &c. Institute of Actuaries, Journal. Institute of Bankers, Journal. Institution of Civil Engineers, Minutes of Proceedings. Iron and Steel Institute, Journal. Lloyd's Register of British and Foreign Shipping, Statistical Tables. London Chamber of Commerce, Journal. London University Gazette. Manchester Literary and Philosophical Society, Memoirs and Proceedings. Royal Agricultural Society, Journal. Royal Asiatic Society, Journal. Royal Colonial Institute, Proceedings and Journal. Royal Geographical Society, Geographical Journal. Royal Irish Academy, Proceedings and Transactions. Royal Meteorological Society, Meteorological Record and Quarterly Journal. Royal Society, Proceedings. Royal United Service Institution, Journal. Sanitary Institute, Journal. Society of Arts, Journal. Statistical and Social Inquiry Society of Ireland, Journal. Surveyors' Institution, Professional Notes and Transactions. Trade Circulars.

#### (a) Foreign Countries.

##### Argentine Republic—

Agricultura. Ministerio de. Boletín mensual de	} The Ministry of
Estadística y Comercio. (Current numbers).....	
Buenos Ayres (Province). Direccion General de	} The Provincial Sta-
Estadística. Boletín mensual. (Current numbers)	
Buenos Ayres (City). Memoria de la Intendencia	} Mr. John Oldham
Municipal. Año 1903. Plates and diagrams, 8vo.	
1904 .....	} Digitized by Google
[Contains general statistical information in regard to the city.]	

## (a) Foreign Countries—Contd.

**Austria-Hungary—**

- Ackerbau-Ministeriums. Statistisches Jahrbuch des k.k. für 1903. (Current numbers) ..... } The Ministry of Agriculture
- Berufsstatistik nach den Ergebnissen der Volkszählung vom 31 Dezember, 1900. Heft 1. Analytische Bearbeitung und Reichsübersicht. Hefte 11 und 12. Fol. 1904 ..... } The Central Statistical Commission  
[A short notice of this is given in this *Journal*, on p. 671.]
- Mitteilungen des k.k. Finanz-Ministeriums. X Jahrgang. Heft 2. Ausgegeben im Oktober, 1904. Diagrams, 8vo. 1904 ..... } The Ministry of Finance  
[Contains Report on the Salt Mines and Industry of Austria, and on the condition of the workers.]
- Österreichisches Wirtschaftspolitisches Archiv. (vormals "Austria"). (Current numbers.) 8vo. .... } The Ministry of Commerce
- Österreichisches Statistisches Handbuch. 22<sup>er</sup> Jahrgang, 1903. 8vo. 1904 ..... } The Central Statistical Commission  
[This issue, besides containing the results of last census, gives results of census of unemployed, returns as to owners of land, and a table showing population of the Monarchy in 1854-1900.]
- Statistische Monatschrift. (Current numbers) .....
- Statistische Nachrichten aus dem Gesamtgebiete der Landwirtschaft. (Current numbers) .....
- Hungary.* Commerce extérieur, des pays de la Couronne Hongroise en 1903. La. 8vo. 1904 ..... } The Central Statistical Bureau
- Bukowina.* Mitteilungen des statistischen Landesamtes des Herzogtums Bukowina. Heft 10, Direkten Steuern in 1893-1902. La. 8vo. 1904 .... } The Statistical Bureau
- Budapest.* Monatshefte des Budapester Communal-Statistischen Bureaus. (Current numbers) ..... } The Municipal Statistical Bureau

**Belgium—**

- Annuaire Statistique de la Belgique. 34<sup>e</sup> année, 1903. 8vo. 1904 ..... } The Bureau of General Statistics  
[This volume, in addition to the usual information, now gives, the annual returns of agricultural production of farms of not less than 1 hectare.]
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Pottery, brick, cement, glass, &c.	9
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(Corrected to 31st December, 1904.)

## ROYAL STATISTICAL SOCIETY.

(FOUNDED 1834. INCORPORATED 1887.)

9, ADELPHI TERRACE,  
STRAND, W.C., LONDON.

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Printers in Ordinary to His Majesty.

1904.

# ROYAL STATISTICAL SOCIETY.

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HIS MOST GRACIOUS MAJESTY THE KING.

## Honorary President.

H.R.H. THE PRINCE OF WALES, K.G.

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(*having filled the Office of President*).

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# ROYAL STATISTICAL SOCIETY.

No. 9, ADELPHI TERRACE, STRAND, W.C., LONDON.

## NOTICES TO FELLOWS.

December, 1904.

THE Council desire to call the attention of the Fellows to the fact that notwithstanding the change in the name of the Society by the addition of the word "Royal," they are still, in using letters after their names, signifying the membership of the Society, only entitled under Rule 6, to use the letters F.S.S.

ANNUAL Subscriptions are due in advance, on the 1st of January in each year. A Form for authorising a Banker or Agent to pay the Subscription Annually, will be forwarded on application to the Assistant Secretary. When convenient, this mode of payment is recommended. Drafts should be made payable to the order of "The Royal Statistical Society," and crossed "*Drummond and Co.*"

To be included in the Ballot at any particular Ordinary Meeting, the Nomination Papers of Candidates for Fellowship must be lodged at the Office of the Society at least six days before the date of such Meeting.

FELLOWS who may desire to receive Special and Separate Notices of each Paper to be read before the Society at the Ordinary Meetings, should indicate their wishes to the Assistant Secretary.

THE Ordinary Meetings of the Society are held at 5 p.m., in most cases at The Society's Rooms, 9, Adelphi Terrace, W.C.

Particulars of the Papers to be read, and of the time and place of Meeting, will always be found in an advertisement on that page of the "*Times*" which faces the leading articles, on the Saturday preceding the holding of the Meeting. The advertisement also appears in other London Daily Papers at the same time, and to these announcements the attention of Fellows is particularly directed.

THE *Journal* is issued on the last day of the months of March, June, September, and December in each year. Copies are delivered carriage free to all Fellows of the Society. Arrangements have been made for their delivery to those Fellows resident in London and the suburbs by Messrs. Carter Paterson & Co., and to most provincial Fellows by post. All copies for Colonial and Foreign Fellows are sent by mail. The *Journals* should reach British Fellows within the first fourteen days of the months of April, July, October, and January respectively, and those resident abroad somewhat later, on account of the time occupied in transmission. Addressees who fail to receive their *Journals* at the proper time are earnestly requested to communicate with the ASSISTANT SECRETARY without delay, as the carriers cannot be expected to investigate complaints or be responsible for loss unless prompt notice be given.

THE Library and the Reading Room are open daily for the use of Fellows from 10 a.m. to 5 p.m., excepting on Saturdays, when they are closed at 2 p.m.

It is requested that any change of address may be notified promptly to the ASSISTANT SECRETARY.

# CALENDAR FOR THE SESSION 1904-05

1904	MON.	TUES.	WED.	THURS.	FRI.	SATUR.	SUN.	1905	MON.	TUES.	WED.	THURS.	FRI.	SATUR.	SUN.
NOV.	...	1	2	3	4	5	6	MAY	1	2	3	4	5	6	7
	7	8	9	10	11	12	13		8	9	10	11	12	13	14
	14	15	16	17	18	19	20		15	16	17	18	19	20	21
	21	22	23	24	25	26	27		22	23	24	25	26	27	28
	28	29	30						29	30	31				
DEC.	...	...	...	1	2	3	4	JUNE	...	...	...	1	2	3	4
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	12	13	14	15	16	17	18		12	13	14	15	16	17	18
	19	20	21	22	23	24	25		19	20	21	22	23	24	25
	26	27	28	29	30	31			26	27	28	29	30		
1905								JULY	...	...	...	...	...	1	2
JAN.	...	...	...	...	...	...	1		3	4	5	6	7	8	9
	2	3	4	5	6	7	8		10	11	12	13	14	15	16
	9	10	11	12	13	14	15		17	18	19	20	21	22	23
	16	17	18	19	20	21	22		24	25	26	27	28	29	30
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	30	31													
FEB.	...	...	1	2	3	4	5	AUG.	...	1	2	3	4	5	6
	6	7	8	9	10	11	12		7	8	9	10	11	12	13
	13	14	15	16	17	18	19		14	15	16	17	18	19	20
	20	21	22	23	24	25	26		21	22	23	24	25	26	27
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	24	25	26	27	28	29	30		23	24	25	26	27	28	29
									30	31					

Particulars of the Papers to be read, and of the time and place of Meeting, will always be found in an advertisement on that page of the "Times" which faces the leading articles, on the Saturday preceding the holding of the Meeting. The advertisement also appears in other London Daily Papers at the same time, and to these announcements the attention of Fellows is particularly directed.

The latest arrangements as to Papers and Meetings up to the time of going to press will be found at page vii in each issue of the *Journal*.

## THE ANNUAL GENERAL MEETING

WILL BE HELD ON TUESDAY, THE 27TH JUNE, 1905, AT THE SOCIETY'S ROOMS.

# Programme of the Session 1904-5.

THE

## ORDINARY MEETINGS

WILL BE HELD

IN THE MONTHS OF NOVEMBER TO JUNE

IN MOST CASES

**AT THE SOCIETY'S ROOMS,**  
*9, Adelphi Terrace, Strand, W.C., London.*

*The Chair will be taken at 5 p.m. on the following dates:—*

Tuesday, Jan. 17.  
„ Feb. 21.  
„ March 21.

Tuesday, April 18.  
„ May 16.  
„ June 27.

SEE NOTE ON THE OPPOSITE PAGE.

*The following Papers have been read this Session:—*

The President's Address. By SIR FRANCIS SHARP POWELL, Bart., M.P.  
(Delivered 15th November, 1904.)

"The Accounts of the Colleges of Oxford, 1893-1903 ; with Special  
Relation to their Agricultural Revenues." By L. L. PRICE, M.A.  
(Read 20th December, 1904.)

*The following Papers have been offered ; and from  
these and from others that may yet be offered, a selec-  
tion will be made by the Council:—*

"Reforms Needed in the Annual Returns of Vital Statistics." By  
REGINALD DUDFIELD, M.A., M.B.

"The Seasons in the British Isles since 1878." By W. N. SHAW,  
M.A., F.R.S., D.Sc.

"The Progress of Friendly Societies and other Institutions connected  
with the Friendly Societies' Registry Office during the Ten Years  
1894-1904." By E. W. BRABROOK, C.B., F.S.A.

"The Financial and Fiscal System in India." By J. E. O'CONNOR, C.I.E.

"The Recent Course of Shipping Freights." By SIR THEO. V. S.  
ANGIER.

"On the Growth of London during the Nineteenth Century, with  
some Information as to the Distribution and Progress of Popula-  
tion in the Surrounding Counties." By T. A. WELTON.

"Financial Prospects in South Africa." By H. BIRCHENOUGH, M.A.

# ROYAL STATISTICAL SOCIETY:

## AN OUTLINE OF ITS OBJECTS.

---

THE *Royal Statistical Society* was founded, in pursuance of a recommendation of the British Association for the Advancement of Science, on the 15th of March, 1834; its objects being, the careful collection, arrangement, discussion and publication, of facts bearing on and illustrating the complex relations of modern society in its social, economical, and political aspects,—especially facts which can be stated numerically and arranged in tables;—and also, to form a Statistical Library as rapidly as its funds would permit.

The Society from its inception has steadily progressed. It now possesses a valuable Library of about 40,000 volumes, and a Reading Room. Monthly meetings are held from November to June, which are well attended, and cultivate among its Fellows an active spirit of investigation; the Papers read before the Society are, with an abstract of the discussions thereon, published in its *Journal*, which now consists of sixty-seven annual volumes, and forms of itself a valuable library of reference.

The Society has originated and statistically conducted many special inquiries on subjects of economic or social interest, of which the results have been published in the *Journal*, or issued separately.

To enable the Society to extend its sphere of useful activity, and accomplish in a yet greater degree the various ends indicated, an increase in its numbers and revenue is desirable. With the desired increase in the number of Fellows, the Society will be enabled to publish standard works on Economic Science and Statistics, especially such as are out of print or scarce, and also greatly extend its collection of Foreign works. Such a well-arranged Library for reference as would result does not at present exist in England, and is obviously a great *desideratum*.

The Society is cosmopolitan, and consists of Fellows and Honorary Fellows, forming together a body, at the present time, of about *one thousand* Members.

The Annual Subscription to the Society is *Two Guineas*, and at present there is no entrance fee. Fellows may, on joining the Society, or afterwards, compound for all future Annual Subscriptions by a payment of *Twenty Guineas*.

The Fellows of the Society receive gratuitously a copy of each part of the *Journal* as published quarterly, and have the privilege of purchasing back numbers at a reduced rate. The Library (reference and circulating), and the Reading Room, are open daily for the convenience of Members.

---

Nomination Forms and any further information will be furnished, on application to the *Assistant Secretary, Royal Statistical Society*, 9, *Adelphi Terrace, Strand, W.C., London*.

# ROYAL STATISTICAL SOCIETY.

## LIST OF THE SOCIETY'S PUBLICATIONS.

*Note.*—Sets—or Copies of any number—of the *Journal*, or of the other Publications of the Society (if not out of print), can be obtained at the Offices of the Royal Statistical Society, 9, Adelphi Terrace, Strand W.C., or through any bookseller.

	Price.
Journal (published quarterly)—	
Vols. 1—67. 8vo. 1838-1904 .....	5s. each part*
General Analytical Index to Vols. 1—50 of the Journal (1838-87). In 4 parts. 8vo.—	
(i) For Vols. 1—15 (1838-52).....	7s. 6d
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Subject-Index to the Journal, Vols. 28—57, 1865-94 .....	1s. 6d.
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Statistics of the Farm School System of the Continent (reprinted from the <i>Journal</i> , with a Preface and Notes). 63 pp. 8vo. 1878 .....	1s.
Production and Consumption of Meat and Milk in the United Kingdom. Reports of Committee appointed 20th November, 1900, to Inquire into Statistics Available as a Basis for Estimating Production and Consumption of Meat and Milk in United Kingdom; with observations by Mr. R. H. Rew. 8vo. 1904 .....	1s.
Catalogue of the Library—	
iv + 573 pp. Cloth, super royal 8vo. 1884 .....	10s.
Index to the Catalogue of 1884—	
i + 372 pp. Cloth, super royal 8vo. 1886 .....	10s.
Jubilee Volume—	
xv + 372 pp. Cloth, 8vo. 1885.....	10s. 6d.
List of Fellows, Rules and Bye-Laws, Regulations of the Library, and Outline of the Objects of the Society, &c.	Issued gratuitously
Corrected annually to 31st December. 8vo.	

*Special prices of back Numbers of the Journal, &c., to Fellows only.*

Fellows can obtain sets—or single copies of any number—of the *Journal*, or copies of the other Publications, at the Society's Rooms, 9, Adelphi Terrace, Strand, W.C.

By various resolutions of the Council, the prices charged to Fellows are as follows :—(a.) back numbers of the *Journal* of the Society, three-fifths of the publishing price ; (b.) each part of the General Index to the *Journal*, 2s. 6d. ; (c.) the Jubilee Volume, 5s. ; (d.) the Subject Index, 1s.

**NOTE.**—One or two numbers of the *Journal* and Part ii of the Index are now out of print.

\* Before 1870 the price varied.

# ROYAL STATISTICAL SOCIETY.

## LIST

OF THE

## Society's Guy Medallists,

*With the Date of the Awards.*

### THE GUY MEDAL

*Has been awarded in GOLD to—*

1892. Mr. CHARLES BOOTH. | 1894. Sir ROBERT GIFFEN.  
1900. Mr. J. A. BAINES.

*In SILVER to—*

NAME.	FOR HIS PAPER ON
1893. Sir JOHN GLOVER.	<i>*Tonnage Statistics of the Decade, 1880-1890.</i>
1894. Mr. A. SAUERBECK.	<i>Prices of Commodities during the last Seven Years.</i>
1895. Mr. A. L. BOWLEY.	<i>Changes in Average Wages (Nominal and Real) in the United Kingdom between 1860 and 1891.</i>
1897. Mr. FRED. J. ATKINSON.	<i>Silver Prices in India.</i>
1899. Mr. CHARLES S. LOCH.	<i>Poor Relief in Scotland: its Statistics and Development, 1791-1891.</i>
1900. Mr. R. F. CRAWFORD.	<i>Notes on the Food Supply of the United Kingdom, Belgium, France, and Germany.</i>
1901. Mr. T. A. WELTON.	<i>Distribution of Population in England and Wales in the Period of Ninety Years from 1801 to 1891.</i>
1902. Mr. R. H. HOOKER.	<i>Suspension of the Berlin Produce Exchange, and its effect on Corn Prices.</i>
1903. M. YVES GUYOT.	<i>The Sugar Industry on the Continent.</i>
1904. Mr. D. A. THOMAS, M.A., M.P.	<i>The Growth and Direction of our Foreign Trade in Coal during the last Half Century.</i>

\* This paper was one of a series which now contains five decennial reviews.



# ROYAL STATISTICAL SOCIETY.

## LIST

OF THE

## Society's Howard Medallists.

NAME OF MEDALLIST.	SUBJECT OF COMPETITION
1875. Mr. EDWARD SMITH.	<i>Influence of improved Dwellings of the Poor in Rural Districts of England.</i>
1876. Dr. J. C. STEELE.	<i>Past and Present Mortality of Hospitals in the United Kingdom.</i>
1878. Dr. JOHN MARTIN and Captain H. HILDYARD (extra Prize).	<i>Effects of Health and Disease on Military and Naval Operations.</i>
1879. Miss B. JOURDAN.	<i>Improvements in Education of Children in Eighteenth and Nineteenth Centuries.</i>
1880. Mr. H. P. POTTER.	<i>The Oriental Plague, and Howard's Labours on the subject.</i>
1881. Dr. F. POLLARD.	<i>On the Jail Fever, from the earliest Black Assize to the latest Outbreak.</i>
1882. Mr. D. MANSON FRASER.	<i>State of English Prisons in the Eighteenth Century, and its relation to Small-Pox.</i>
1883. Dr. R. D. R. SWEETING.	<i>John Howard on Health of Inmates of Prisons, Workhouses, and other Public Institutions.</i>
1884. Dr. CLEMENT DUKES.	<i>Howard's Opinions on the Preservation of Health as affected by Personal Habits.</i>
1893. Dr. HUGH R. JONES.	<i>Perils and Protection of Infant Life.</i>
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## HOWARD MEDAL.

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### ROYAL STATISTICAL SOCIETY.

9, ADELPHI TERRACE,  
STRAND, W.C., LONDON,  
*June, 1904.*

The next Competition for the "Howard Medal" (1904—1905) will take place in the ensuing Session. The Essays must be sent in on or before the 30th of June, 1905.

In addition to the Medal, a grant of £20 will be awarded to the writer who may be the successful Competitor.

The Subject is :—

**"A critical Inquiry into the Comparative Prevalence of Lunacy and other Mental Defects in the United Kingdom during the last fifty years."**

Any necessary explanations may be obtained at the Office of the Society.

By Order,

J. A. CABLE,

*Assistant Secretary.*

# ROYAL STATISTICAL SOCIETY.

*Founded 15th March, 1834, Incorporated 31st January, 1887.*

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Those marked *c* have Served or are Serving on the Council.

„ *d* have made Presentations to the Library.

„ *p* have contributed Papers to the Society.

*Those marked thus \* have compounded for their Annual Subscriptions.*

*The names of Present Members of Council are printed in SMALL CAPITALS.*

Year of Election.		
1904		à Ababrelton, Robert, <i>Post Box 322, Pietermaritzburg, Natal.</i>
1900		Ablett, Cecil Gerard, <i>1, Guardian Chambers, Port Elizabeth.</i>
1888		Ackland, Thomas G., F.I.A., <i>10, Church-crescent, Muswell-hill, Highgate, N.</i>
1888	<i>c d p</i>	Acland, The Right Hon. Arthur Herbert Dyke, M.A., <i>Westholme, Scarborough.</i>
1898		Acland, Sir C. Thomas Dyke, Bart., <i>Killerton, Exeter.</i>
1892	<i>c d p</i>	Acworth, William Mitchell, M.A., <i>Alice Holt, near Farnham.</i>
1891		Addington, Right Hon. Lord, <i>24, Prince's-gate, S.W.</i>
1902	<i>d</i>	Adeane, Charles Robert Whorwood, <i>Babraham Hall, near Cambridge.</i>
1890		Adler, Marcus Nathan, M.A., F.I.A., <i>22, Craven-hill, W.</i>
1884		Agius, Edward Tancred, <i>3, Belsize-grove, N.W.</i>
1879		Akers-Douglas, The Right Hon. Aretas, M.P., <i>Chilston-park, Maidstone, Kent.</i>
1876		Aldwinckle, Thomas Williams, <i>20, Denman-street, London Bridge, S.E.</i>
1896	<i>d</i>	Allan, Francis John, M D., <i>Westminster City Hall, Charing Cross-rd., W.C.</i>
1889		Allen, Frank, J.P., <i>73, Tinakori-road, Wellington, N.Z.</i>

Year of Election.		
1896		Allen, George Berney, <i>Free Chase, Warminglid, Hayward's Heath.</i>
1876		Allen, John T. R., <i>Greeve Gate-road, Hunstanton, Norfolk.</i>
1899	d	Allen, Richard James, <i>Cotton Assocn., Ltd., St. Mary's-gate, Manchester.</i>
1898		Allen, William Henry, <i>Bromham House, Bromham, near Bedford.</i>
1880		*Allerton, The Right Hon. Lord, <i>Chapelallerton, Leeds.</i>
1893		Anderson, Herbert William, <i>Fairfield, Broom-road, Teddington.</i>
1889		Anderson, John Andrew, <i>Faversham, Kent.</i>
1886		Andras, Henry Walsingham, F.I.A., <i>50, Regent-street, W.</i>
1902	d	Angier, Sir Theodore Vivian Samuel, <i>Exchange Chambers, St. Mary Axe, E.C.</i>
1871		Angus, R. B., <i>Montreal, Canada.</i>
1897		Anning, Edward Herbert, F.R.G.S., <i>78, Cheapside, E.C.</i>
1884		Anning, Edward James, <i>78, Cheapside, E.C.</i>
1872		*Archibald, William Frederick A., M.A., <i>114, Royal Courts of Justice, Strand, W.C.</i>
1892		Argyle, Jesse, <i>67, Mildmay-park, N.</i>
1904		Arkovy, Richard von, <i>65, Vaczi Utcza, Budapest.</i>
1897		Arnold, William, <i>11, Albion-street, Hanley, Staffs.</i>
1888		Asch, William, <i>7, Lothbury, E.C.</i>
1900		Aston, William Henry, <i>46, Eagle Wharf-road, New North-road, N.</i>
1888	d	Atkinson, Charles, <i>56, Palewell-park, East Sheen.</i>
1893	d p	Atkinson, Frederic J. ( <i>Deputy Auditor General</i> ), <i>c/o King, King &amp; Co., 45, Pall Mall, S.W.</i>
1892		*Atkinson, Robert Hope, <i>332, South 4th Avenue, Mt. Vernon, N. Y., U.S.A.</i>
1865	c d p	AVEBURY, RIGHT HON. LORD, P.C., F.R.S. ( <i>Honorary Vice-President</i> ), <i>High Elms, Farnbro', R.S.O., Kent.</i>
1904		Avery, John, A.C.A., <i>23, St. Swithin's-lane, E.C.</i>
1893		Aves, Ernest, M.A., <i>5, Lexden-terrace, Tenby, South Wales.</i>

Year of Election.		
1872	<i>c d</i>	*Babbage, Major-General Henry Prevost, <i>Mayfield, Lansdown, Cheltenham.</i>
1872		*Backhouse, Edmund, <i>Trebah, Falmouth.</i>
1892		Bacon, George Washington, F.R.G.S., <i>127, Strand, W.C.</i>
1855	<i>c d</i>	BAILEY, ARTHUR HUTCHESON, F.I.A., <i>26, Mount Ephraim-road, Streatham, S.W.</i>
1900		Baily, James Thomas Herbert, <i>56, Charing Cross, S.W.</i>
1881	<i>c d p</i>	BAINES, JERVOISE ATHELSTANE, C.S.I. ( <i>Hon.</i> <i>Foreign Secretary and Vice-President</i> ), <i>Kidlington, Oxon.</i>
1887		*Baldwin, Alfred, M.P., <i>Wilden House, Stourport, Worcestershire.</i>
1878		Balfour, The Right Hon. Arthur J., M.P., F.R.S., <i>10, Downing-street, S.W.</i>
1886		Balfour, The Right Hon. Gerald William, M.P., <i>3, Whitehall Court, S.W.</i>
1903		Bamber, Lieut.-Col. Charles James, D.P.H., <i>Sanitary Comm. to Gov. of the Punjab, Lahore.</i>
1904		Banaji, Khoshru Nowrosji, <i>Ballantine Lodge, Ahmedabad, Bombay Presy.</i>
1881	<i>d</i>	*Barfoot-Saunt, William Henry, <i>Ozenden Hall, Market Harborough, Leicestershire.</i>
1902		Barham, Sir George, <i>Snape, Wadhurst, Sussex; and Danehurst,</i> <i>Hampstead.</i>
1899		*Barnardo, Thomas John, F.R.C.S., Edin., <i>St. Leonard's Lodge, Surbiton.</i>
1887		Barnes, Joseph Howard, F.I.A., <i>70, Lombard-street, E.C.</i>
1885		Barratt, Thomas J., <i>75, New Oxford-street, W.</i>
1887		*Barrett, Thomas Squire, F.Z.S., M.A.I., &c., <i>Rose Cottage, Millfield-road, Widnes.</i>
1888		*Bartlett, Frederick W., <i>Paymaster General's Office, Whitehall, S.W.</i>
1903		Barton, Edwin, <i>29, Corporation-street, Manchester.</i>

Year of Election.		
1889	d	Bastable, Professor C. F., M.A., LL.D., 6, Trevelyan-terr., Brighton-rd, Rathgar, Co. Dublin.
1877	c d p	BATEMAN, SIR ALFRED EDMUND, K.C.M.G. ( <i>Honorary Vice-President</i> ), Woodhouse, Wimbledon-park.
1877		Bayfield, Arthur, 95, Colmore-row, Birmingham.
1873		*Baynes, Alfred Henry, F.R.G.S., 19, Furnival-street, Holborn, E.C.
1875	d	*Beardsall, Francis E. M., 42, Winifred-road, Urmston, nr. Manchester.
1875	d	*Beaufort, William Morris, F.R.A.S., F.R.G.S., 18, Piccadilly, W.
1882	d	*Beazeley, Michael Wornum, M.A., Worting, Basingstoke.
1901		Beech, David, 508, Salisbury House, London Wall, E.C.
1882	c d	*Beeton, Henry Ramie (18, Austin Friars, E.C.), 9, Maresfield-gardens, Hampstead, N.W.
1899	d	Beeton, Mayson M., B.A., Horsey Hall, Norfolk.
1886	d	Begg, Ferdinand Faithfull, Bartholomew House, E.C.
1890		Bell, Frederick, F.I.A., 47, Chancery-lane, W.C.
1892	d	Bell, Frederick William, P.O. Box 5,666, Johannesburg, Transvaal.
1884	d	Bell, James T., Northcote, Dowanhill, via Glasgow.
1901	d	Bellingham, Archer, 6, Mandeville-place, W.
1878	d p	Bence-Jones, Henry R., B.A., Board of Trade, 1, Whitehall, S.W.
1897		Bennett, William, City Mutual Life Ass. Soc., Melbourne.
1888		*Benson, Godfrey R., 23, The Grove, Boltons, S.W.
1884		*Bentley, Richard, F.R.G.S., Upton, Slough, Bucks.
1884	d	Berg, Wilhelm, 21, Mincing-lane, E.C.
1890		Berry, Arthur, M.A., King's College, Cambridge.
1891		Berry, Oscar, C.C., F.C.A., Monument House, Monument-square E.C.
1900		Bethell, Alfred James, Middlethorpe Lodge, Dringhouses, York.
1875		Bevan, Thomas, Stone-park, near Dartford, Kent.



Year of Election.		
1869	p	*Beverley, The Hon. Mr. Justice Henry, <i>Nascot Lodge, Watford.</i>
1891	d	Biddle, Daniel, M.R.C.S., L.S.A., <i>Charlton Lodge, Kingston-on-Thames.</i>
1888		Billinghurst, Henry F., <i>7, Oakcroft-road, Blackheath, S.E.</i>
1899	c	BIRCHENOUGH, HENRY, M.A., <i>79, Eccleston-square, S.W.</i>
1901	-	Bird, Harry, C.C., <i>Strathmore, Chingford, Essex.</i>
1881		Bishop, George, <i>113, Powis-street, Woolwich.</i>
1902		Bisset-Smith, George Tulloch, <i>55, Carlton-place, Aberdeen.</i>
1898		Blount, Edward Thomas Joseph, F.F.A., A.I.A., <i>Standard Insurance Co., Shanghai, China.</i>
1898	c d	*BLYTH, SIR JAMES, BART. (Vice-President), <i>Stansted, Essex.</i>
1884	d	Boileau, John Peter H., M.A., M.D., &c. (Lieut.- <i>Col., Army Medical Staff),</i> <i>Trowbridge, Wilts.</i>
1881		Bolitho, Thomas Robins, <i>Trengwainton, Hea Moor, R.S.O., Cornwall.</i>
1887		Bolling, Francis, <i>2, Laurence Pountney-hill, E.C.</i>
1890		Bolton, Edward, J.P., <i>325, Anlaby-road, Hull.</i>
1885	c d	*Bonar, James, M.A., LL.D., <i>Civil Service Commission, Burlington-gardens, W.</i>
1887		Bond, Edward, M.P., <i>Elm Bank, Hampstead, N.W.</i>
1885	c d p	BOOTH, RT. HON. CHARLES, P.C., D.C.L., D.Sc., F.R.S. (Hon. Vice-President), <i>8, Adelphi-terrace, Strand, W.C.</i>
1900		Bottomley, Harry, <i>Shire Hall, Durham.</i>
1899	d	Bourne, Arthur ( <i>Equitable Life Office</i> ), <i>120, Broadway, New York, U.S.A.</i>
1894	c d p	Bowley, Arthur Lyon, M.A., <i>Lynwood, Southern-hill, Reading.</i>
1879		Bowley, Edwin, <i>29, Croftdown-road, Highgate-road, N.W.</i>
1894	c d p	Brabrook, Edward William, C.B., F.S.A., <i>178, Bedford-hill, Balham, S.W.</i>
1883		Brahy, Frederick, F.C.S., F.G.S., <i>Bushey Lodge, Teddington.</i>
1875		Braby, James, J.P., <i>Eaton Lodge, 1, Cromwell-road, Hove, Sussex.</i>

Year of Election.		
1900	d p	Branford, Victor Verasis, M.A., 5, <i>Old Queen-street, Westminster, S.W.</i>
1873	c d p	BRASSEY, THE RIGHT HON. LORD, K.C.B. ( <i>Honorary Vice-President</i> ), 4, <i>Great George-st., S.W.</i> ; and 24, <i>Park-lane.</i>
1903	d p	Brassey, The Hon. Thomas A., <i>Park-gate, Battle.</i>
1864		*Braye, The Right Hon. Lord, <i>Stanford Hall, Market Harborough.</i>
1902	d	Broadbent, Albert, 19, <i>Oxford-road, Manchester.</i>
1883		Brooke, C. B., 16, <i>Leadenhall-street, E.C.</i>
1874		Broom, Andrew, A.C.A., <i>Eaglehurst, Staines, Middlesex.</i>
1895	d	Broomhall, George James Short, 17, <i>Goree Piazzas, Liverpool.</i>
1878		Brown, Sir Alexander Hargreaves, Bart., M.P., 12, <i>Grosvenor-gardens, S.W.</i>
1901		Brown, B. Hal., <i>London &amp; Lancs. Life Ins. Co., Montreal, Canada.</i>
1896		*Brown, Daniel Maclaren, junr., <i>P.O. Box 187, Corru Linn, Port Elizabeth.</i>
1893		Brown, James William Bray, F.S.A.A., <i>Corporation-street, Birmingham; and Moseley, Worcestershire.</i>
1903	d	Brown, Samuel Stanley, <i>Hamilton House, Victoria Embankment, E.C.</i>
1890		Browne, Edward William, 33, <i>Poultry, E.C.</i>
1901		Browne, Henry Doughty, J.P., 10, <i>Hyde Park-terrace, W.</i>
1875	p	Browne, Thomas Gillespie C., F.I.A., 11, <i>Lombard-street, E.C.</i>
1903		Brownfoot, Harry Allison, 32a, <i>Mosley-street, Newcastle-on-Tyne.</i>
1886		*Brunner, Sir John Tomlinson, Bart., M.P., <i>Druid's Cross, Wavertree, Liverpool.</i>
1900		Bullock, Charles J., Ph.D., <i>Harvard University, Cambridge, Mass., U.S.A.</i>
1880	c d p	*Burdett, Sir Henry Charles, K.C.B., <i>The Lodge, Porchester-square, W.</i>
1873		*Burdett-Coutts, The Right Hon. the Baroness, 1, <i>Stratton-st., W.</i> ; and <i>Holly Lodge, Highgate.</i>
1884	d	Burdett-Coutts, William, M.P., 1, <i>Stratton-street, Piccadilly, W.</i>
1902		Burgess, James Henry, F.S.A.A., 14, <i>Albert-crescent, Richmond-road, Lincoln.</i>

Year of Election.		
1897		Burke, David, A.I.A., <i>Royal Victoria Life Ins. Co., P.O. Box 78, Montreal, Canada.</i>
1895		Burrup, John Arthur Evans, <i>c/o Messrs. King, Hamilton &amp; Co., Calcutta.</i>
1880		Burt, Frederick, F.R.G.S., <i>Pinewood, Stoke Poges, R.S.O. nr. Slough, Bucks.</i>
1901		Burt, George Stephen, <i>4, Lothbury, E.C.</i>
1872		*Burton, The Right Hon. Lord, <i>Chesterfield House, Mayfair, W ; and Range- more, Burton-on-Trent.</i>
1898		Burton, William Roland, <i>c/o Colonial Mutual Life Ass. Soc., Cape Town.</i>
1893	d	*Bushill, Thomas William, <i>14 Park-avenue, Soho Hill, Birmingham.</i>
1892		Byworth, Charles Joseph, F.S.A.A., <i>Narford, Lyford-rd., Wandsworth Common, S. W.</i>
1902		Caillard, Sir Vincent Henry P., <i>42, Half Moon-street, W.</i>
1897		Cairnes, Frederick Evelyn, <i>Killester House, Raheny, Co. Dublin.</i>
1903		Caldwell, William, <i>162, Bath-street, Glasgow.</i>
1896		Campbell, Charles William, C.M.G., <i>H.B.M. Consulate General, Shanghai, China.</i>
1879		Campbell-Colquhoun, Rev. John Erskine, <i>Chartwell, Westerham, Kent.</i>
1889	p	Cannan, Edwin, M.A., LL.D., <i>46, Wellington-square, Oxford.</i>
1891	d	Cannon, Henry W. ( <i>Chase National Bank</i> ), <i>83, Cedar-street, New York, U.S.A.</i>
1900	d	Canovai, Commendatore Tito, <i>Bank of Italy, Rome.</i>
1872		*Carillon, J. Wilson, F.S.A., F.R.G.S., <i>The Chimes, Richmond, Surrey.</i>
1888		Carr, Ebenezer, <i>24, Coleman-street, Bank, E.C.</i>

Year of Election.		
1904		Carrington, John Broyden, 2, Aldridge-road-villas, Paddington, W.
1890		*Carter, Eric Mackay, A.I.A., F.C.A., 33, Waterloo-street, Birmingham.
1883	d	*Carter, Joseph Robert, Courtfield, Ross-road, Wallington, Surrey.
1878		*Casley, Reginald Kennedy, M.D., Ipswich.
1881		Causton, Richard Knight, M.P., 12, Devonshire-place, Portland-place, W.
1903		Cawson, Frederick Arthur, Central Bldgs., 41, North John-st., Liverpool.
1884	d	*Chailley-Bert, Joseph, 44, Chaussée d'Antin, Paris.
1902		Chalmers, Patrick R., 156, Cromwell-road, S.W.
1880		*Chamberlain, The Right Hon. Joseph, M.P., F.R.S., 40, Prince's-gardens, S.W.
1901	d p	Chance, Sir William, Bart., M.A., J.P., Orchards, near Godalming.
1903		Channing, Francis Allston, M.A., M.P., 40, Eaton-place, S.W.
1886	d p	*Chapman, Samuel, 227—228, Gresham House, Old Broad-st., E.C.
1903		Chapman, Professor Sydney John, M.A., Owen's College, Manchester.
1901	d	Chapman, Walter William, 4, Moubray House, Norfolk-street, Strand.
1904		Charles, Thomas Edwin, 52, Sandrock-road, Lewisham, S.E.
1892		*Chatham, James, F.I.A., F.F.A., 98, Inverleith-place, Edinburgh.
1901		Cherry, Francis, 45, Lombard-street, E.C.
1851		*Cheshire, Edward, 3, Vanbrugh-park, Blackheath, S.E.
1903		Chiozza-Money, Leo George, Oatlands Park, Weybridge.
1886	d p	*Chisholm, George Goudie, M.A., B.Sc., F.R.G.S., 59, Drakefield-road, Upper Tooting.
1904		Clark, Archibald Brown, 16, Comely Bank-street, Edinburgh.
1900		Clark, John S., 110, Boylston-street, Boston, Mass., U.S.A.
1901		Clark, William Henry, B.A., C.M.G., 1, Temple-gardens, E.C.
1888		Clarke, C. Goddard, J.P., South Lodge, Champion-hill, S.E.
1882	c d	*CLARKE, SIR ERNEST, 13a, Hanover-square, W.

Year of Election.		
1877		*Clarke, Henry, L.R.C P., <i>H.M. Prison, Wakefield, Yorks.</i>
1890		Clarke, Henry, J.P., <i>Cannon Hall, Hampstead, N.W</i>
1899		Claughton, Gilbert H., <i>The Priory, Dudley.</i>
1869	c	Cleghorn, John, <i>South View, North Common-road, Ealing, W.</i>
1853		Clirehugh, William Palin, F.I.A., <i>66, Cornhill, E.C.</i>
1887	c d	COHEN, NATHANIEL LOUIS, <i>11, Hyde Park-terrace, W.</i>
1859		Coles, John, F.I.A., <i>39, Throgmorton-street, E.C.</i>
1892	p	*Collet, Miss Clara Elizabeth, M.A., <i>43, Parliament-street, S.W.</i>
1887		Collet, Sir Mark Wilks, Bart., <i>2, Sussex-square, W.; and St. Clere, Sevenoaks.</i>
1895		Collins, Howard James, <i>The General Hospital, Birmingham.</i>
1882		*Collum, Rev. Hugh Robert, M.R.I.A., F.R.C.I., <i>Leigh Vicarage, near Tonbridge, Kent.</i>
1891	d	Cooper, Joseph, <i>60, Park-street, Farnworth, near Bolton.</i>
1903		Cope, Rev. Robert Goodacre, <i>Hepworth Vicarage, Huddersfield.</i>
1883		Corgialeagno, M., <i>George-yard, Lombard-street, E.C.</i>
1901		Cornish, Henry James, <i>90, Cambridge-gardens, W.</i>
1889		Cornwallis, Fiennes Stanley Wykeham, <i>Linton-park, Maidstone, Kent.</i>
1899	d	Court, Stephen E., <i>Municipal Offices, P.O. Box 1,049, Johannesburg.</i>
1862	c d p	COURTNEY, THE RIGHT HON. LEONARD HENRY, M.A. ( <i>Honorary Vice-President</i> ), <i>15, Cheyne Walk, Chelsea, S.W.</i>
1896	d	Cox, Harold, B.A., <i>6, Raymond-buildings, Gray's Inn, W.C.</i>
1902		*Coxon, William, <i>15, Elsworth-terrace, N.W.</i>
1871	d	Cozens-Smith, Edward, <i>5, Longridge-road, South Kensington, S.W</i>
1888	d	Craggs, Sir John George, M.V.O., F.C.A., <i>Craggs, Turketine &amp; Co., 52, Coleman-st., E.C.</i>
1874	c d p	CRAIGIE, MAJOR PATRICK GEORGE, C.B. ( <i>Honorary Vice-President</i> ), <i>Board of Agriculture and Fisheries, 3, St. James's-square, S.W.</i>

Year of Election.		
1902		Craven, Edward Joseph E., <i>Statistical Office, Custom House, E.C.</i>
1890	<i>c d p</i>	CRAWFORD, RICHARD FREDERICK, <i>Custom House, Lower Thames-street, E.C.</i>
1891		*Crawley, Charles Edward, <i>Accountant-General, Madras, India.</i>
1894		Crease, Major-General Sir John Frederick, K.C.B., <i>Ince, Guildford.</i>
1878		Crewdson, Ernest, <i>Castle Meadows, Kendal.</i>
1892		Cripps, Charles Alfred, K.C., M.P., <i>1, Essex-court, Temple, E.C.</i>
1890		Croal, David Octavius, <i>Financial News, 11, Abchurch-lane, E.C.</i>
1902		Crosfield, Charles James, J.P., <i>323, Vauxhall-road, Liverpool.</i>
1904		Crotch, William Walter, <i>57, Gracechurch-street, E.C.</i>
1900		Crowley, Michael, F.C.A., F.S.A.A., <i>16, College Green, Dublin</i>
1883	<i>c d</i>	CUNNINGHAM, REV. WILLIAM, M.A., D.D., <i>2, St. Paul's-road, Cambridge.</i>
1879	<i>d</i>	Curtis, Robert Leabon, F.S.I., J.P., <i>120, London Wall, E.C.</i>
1873		Czarnikow, Cæsar, <i>29, Mincing-lane, E.C.</i>
1900		Da Costa, José Simao ( <i>Garantia da Amazonia</i> ), <i>Belem do Para, Brazil.</i>
1900		Dale, Charles Ernest, F.S.A.A., <i>Old Calabar, West Africa.</i>
1886		Dale, Sir David, Bart., <i>West Lodge, Darlington.</i>
1888		Dangerfield, Athelstan, A.C.A., <i>56, Cannon-street, E.C.</i>
1898	<i>d</i>	*Danson, Francis Chatillon, <i>Liverpool and London Chambers, Liverpool.</i>
1901	<i>d</i>	Danvers, Ernest, F.R.G.S., <i>475, B. Mitre, Buenos Ayres.</i>
1880	<i>c d p</i>	DANVERS, FREDERICK CHARLES, <i>50, Egmont-road, Sutton, Surrey.</i>

Year of Election.		
1897	<i>d p</i>	*Darwin, Major Leonard, R.E., F.R.G.S., 12, <i>Egerton-place, S. W.</i>
1892		Dash, William Lawson, J.P., 301, <i>Pitt-street, Sydney, N.S.W.</i>
1901	<i>d</i>	Davar, Sohrab R., M.S.A., 9, <i>Elphinstone Circle, Fort, Bombay.</i>
1901		Davies, Dixon Henry, 12, <i>Booth-street, Piccadilly, Manchester.</i>
1869		Davies, James Mair, 168, <i>St. Vincent-street, Glasgow.</i>
1896		Davies, Theodore Llewelyn, <i>The Treasury, Whitehall, S.W.</i>
1899		D'Avigdor-Goldsmid, Osmond Elim, <i>Somerhill, Tonbridge, Kent.</i>
1888		Dawson, G. J. Crosbie, M. Inst. C.E., F.G.S., <i>May-place, Newcastle, Staffs.</i>
1899		Dawson, Miles Menander, 11, <i>Broadway, New York, U.S.A.</i>
1903	<i>d</i>	Dawson, Sidney Stanley, F.C.A., F.C.I.S., 51, <i>North John-street, Liverpool.</i>
1897	<i>d</i>	Deane, Albert Bickerton, 35, <i>Great George-street, Westminster, S.W.</i>
1880		Debenham, Frank, 1, <i>Fitzjohn's-avenue, Hampstead, N.W.</i>
1885	<i>d</i>	De Broë, Emile Conrad De Bichin, <i>Walden Lodge, Carlisle-road, Eastbourne.</i>
1879		*De Ferrieres, The Baron Du Bois, <i>Bay's Hill House, Cheltenham.</i>
1898		Defries, Wolf, B.A., 147, <i>Houndsditch, E.C.</i>
1900	<i>d</i>	De la Plaza, Victorino, LL.D. ( <i>Buenos Ayres Ry. Co.</i> ), <i>Poste Restante, Buenos Ayres.</i>
1891		Denne, William, <i>Phillimore, Wetherill-road, New Southgate, N.</i>
1873		Dent, Edward, 2, <i>Carlos-place, Grosvenor-square, W.</i>
1887		Dent, George Middlewood, 20, <i>Park-avenue, Southport.</i>
1889		De Rothschild, Leopold, D.L., 5, <i>Hamilton-place, Piccadilly, W.</i>
1892		De Smidt, Henry, C.M.G., <i>The Treasury, Cape Town, Cape Colony.</i>
1892		Dewar, William Nimmo ( <i>Standard Life Assurance Co.</i> ), 28, <i>Elizabeth-street, Sydney, N.S.W.</i>
1900		Dewsnup, Ernest Ritson, M.A., <i>College House, Lamoni, Decator, Iowa.</i>
1890		Dickinson, Willoughby Hyett, 51, <i>Camden-hill-road, W.</i>
1903		Digby, William Pollard, <i>Trafalgar-buildings, Charing Cross, W.C.</i>

Year of Election.		
1866	<i>c d p</i>	*Dilke, The Right Hon. Sir Charles Wentworth, Bart., M.P., LL.M., 76, <i>Sloane-street</i> , <i>S. W.</i>
1897		Dobson, Goland Burton, 58, <i>Lincoln's Inn Fields</i> , <i>W. C.</i>
1889		Double, Alfred, C.C., 91, <i>Fore-street</i> , <i>E. C.</i>
1889		Doubleday, William Bennett, 123, <i>Tulse-hill</i> , <i>S. W.</i>
1899	<i>d</i>	Dougharty, Harold, A.I.A., F.C.I.S., <i> Lond. and Lancs. Life Office</i> , 66—7, <i>Cornhill</i> , <i>E. C.</i>
1878	<i>d</i>	Doyle, Patrick, C.E., F.G.S., M.R.A.S., <i>Calcutta</i> .
1894	<i>c d p</i>	DRAGE, GEOFFREY, M.A., 20, <i>Lowndes-square</i> , <i>S. W.</i>
1890		Drummond, Charles James, 21, <i>Dalmore-road</i> , <i>West Dulwich</i> , <i>S. E.</i>
1897	<i>d</i>	Dudfield, Reginald, M.A., M.B., 19, <i>Blomfield-road</i> , <i>Maida Vale</i> , <i>W.</i>
1895	<i>c</i>	Dudley, His Excellency The Earl of, <i>Dublin</i> .
1875	<i>d p</i>	Dun, John, <i>Parr's Bank</i> , <i>Bartholomew-lane</i> , <i>E. C.</i>
1902		Dunbar, Sir William Cospatrick, Bart., C.B., <i>Somerset House</i> , <i>Strand</i> , <i>W. C.</i>
1878	<i>c</i>	*Dunraven, The Right Hon. the Earl of, K.P., C.M.G., <i>Kenry House</i> , <i>Putney Vale</i> , <i>S. W.</i>
1885		Dyer, William John, 17, <i>Montpelier-row</i> , <i>Blackheath</i> , <i>S. E.</i>
1904		Dymant, Arthur Francis, <i>Great Northern Railway</i> , <i>King's Cross Station</i> .
1888		Earnshaw, Jacob, <i>Prudential Assnce. Bldgs.</i> , 78, <i>King-st. Manchester</i>
1888	<i>d</i>	Eckersley, J. C., M.A., F.R.G.S., <i>Ashfield</i> , <i>Wigan</i> .
1883	<i>c d p</i>	EDGEWORTH, PROFESSOR FRANCIS YSIDRO, M.A., D.C.L., 5, <i>Mount Vernon</i> , <i>N. W.</i> ; and <i>All Souls'</i> , <i>Oxford</i> .
1896		Edwards, Charles Lewis, <i>Great Northern Railway Offices</i> , <i>King's Cross</i> .



Year of Election.		
1880		Egerton of Tatton, The Right Hon. Earl, 7, <i>St. James's-square, S.W.</i>
1885	<i>c d p</i>	Elliott, Sir Thomas Henry, K.C.B., <i>Board of Agriculture and Fisheries, 4, White-hall-place, S.W.</i>
1885		Elliott, William, <i>P.O. Box 42, Lower St. George's-st., Cape Town.</i>
1895		Elliott, William, junr., <i>P.O. Box 1583, Johannesburg, South Africa.</i>
1895		Elwell, William Henry, <i>Howard House, 4, Arundel-street, Strand, W.C.</i>
1903		Enthoven, Reginald Edward, I.C.S., 14, <i>Connaught-place, W.</i>
1889	<i>d</i>	Erhardt, William, 7, <i>Bury-street, Bloomsbury, W.C.</i>
1896		Everett, Percy Winn, <i>Oaklands, Elstree, Herts.</i>
1892		Faber, Harald, <i>Fiona, Lennard-road, Penge, S.E.</i>
1875		Faraday, Frederick J., 17, <i>Brazennose-street, Manchester.</i>
1888		Farlow, A. R. King, 4, <i>King-street, Cheapside, E.C.</i>
1889	<i>d</i>	Farnworth, Edward James, F.S.A.A. 26, <i>Winckley-square, Preston.</i>
1900		Farrer, The Right Hon. Lord, <i>Abinger Hall, Dorking.</i>
1890		Faulks, Joseph Ernest, B.A., F.I.A., 187, <i>Fleet-street, E.C.</i>
1893		*Fawcett, Mrs. Millicent Garrett, 2, <i>Gower-street, W.C.</i>
1882		Fell, Arthur, M.A., 46, <i>Queen Victoria-street, E.C.</i>
1894		Fellows, Rowland Hill, F.I.A., 32, <i>Honiton-road, Kilburn, N.W.</i>
1893		Fenwick, John Fenwick, <i>Spencer House, Wimbledon-common.</i>
1899		Finch, Henry Hobson, <i>Goff's Hill, Crawley, Sussex.</i>

Year of Election.		
1889		*Finlay, Major Alexander, <i>The Manor House, Little Brickhill, Bletchley.</i>
1884	d	*Finnemore, The Hon. Mr. Justice R. I., F.R.G.S., <i>Supreme Court, Pietermaritzburg, Natal.</i>
1892		Fisher, George, J.P., M.H.R. ( <i>Chevalier of the Order of Crown of Italy</i> ), <i>Hill-street, Wellington, New Zealand.</i>
1900		Fisher, Professor Irving, Ph.D., <i>Yale University, New Haven, Conn., U.S.A.</i>
1888		Fisher, Walter Newton, F.C.A., <i>4, Waterloo-street, Birmingham.</i>
1898		Fisk, George William Victor, <i>142, Holborn-bars, E.C.</i>
1885		*Fitz-Gerald, Lt.-Col. Wm. G., M.A., F.R.Hist.S.,
1900	d	Fleming, Owen, Assoc. R.I.B.A., <i>3, Warwick-street, Charing Cross, S.W.</i>
1893	d p	*Flux, Professor Alfred William, M.A., <i>McGill University, Montreal, Canada.</i>
1882		Foley, Patrick James ( <i>Pearl Insurance Company</i> ), <i>Adelaide-place, London Bridge, E.C.</i>
1889		Foot, Alfred, <i>8, Park Lane Mansions, Croydon.</i>
1898	d	Forster, John Walter, <i>18, Mountfield-gardens, Tunbridge Wells.</i>
1893		Fortune, David, J.P., <i>84, Wilson-street, Glasgow; and 19, Rowallan-gardens, Partick, Glasgow.</i>
1901		Foster, Harry Seymour, D.L., <i>Albert Mansions, 122, Victoria-street, S.W.</i>
1897		Fountain, H., <i>Board of Trade, Whitehall-gardens, S.W.</i>
1899	c p	FOWLER, THE RIGHT HON. SIR HENRY HARTLEY, G.C.S.I., M.P. ( <i>Honorary Vice-President</i> ), <i>Reform Club, Pall Mall, S.W.</i>
1868	c	Fowler, William, <i>4, Nevill-park, Tunbridge Wells.</i>
1900	c	FOX, ARTHUR WILSON, C.B., <i>Board of Trade, 7, Whitehall-gardens, S.W.</i>
1903		Fox, Matthew Joseph, <i>c/o The National Mutual Life Office, Melbourne.</i>
1878	c d	Foxwell, Professor H. Somerton, M.A., <i>St. John's College, Cambridge.</i>
1894		Francis, Joseph, <i>10, Finsbury-square, E.C.</i>
1887		Frankland, Frederick William, F.I.A., <i>"Herston," Foxton, Manawata, N. Zealand.</i>
1899		Frauklin, Arthur Ellis, <i>29, Pembridge-gardens, Bayswater, W.</i>

Year of Election.		
1903		Fraser, Malcolm Alexander Clement, <i>Government Statistician, Perth, W. Australia.</i>
1886	d	Fream, Professor William, B.Sc., Lond., LL.D., <i>The Vinery, Downton, Salisbury.</i>
1887		Freeman, T. Kyffin, F.G.S., <i>35, Whitehall-park, N.</i>
1890		Freestone, John, <i>15, Beckingham-road, Leicester.</i>
1902		Fremantle, Professor Henry Eardley Stephen, <i>University of South Africa, Cape Town.</i>
1903	d	Fry, Thomas Hallett, <i>14, Queen Victoria-street, E.C.</i>
1886		Fuller, George Pargiter, <i>Neston-park, Corsham, Wilts.</i>
1878		Fuller, William Palmer, <i>2, Verulam-buildings, Gray's Inn, W.C.</i>
1902		Gait, Edward Albert, I.C.S., <i>c/o Messrs. King, Hamilton &amp; Co., Calcutta.</i>
1852		Galsworthy, Sir Edwin Henry, J.P., <i>26, Sussex-place, Regent's-park, N.W.</i>
1860	c d p	Galton, Francis, F.R.S., D.C.L., D.Sc., <i>42, Rutland-gate, S.W.</i>
1887	d	Garcke, Emile, <i>Donington House, Norfolk-street, Strand, W.C.</i>
1895		Garvan, John Joseph, <i>Citizen's Life Assurance Co., Sydney, N.S.W.</i>
1904		*Gates. Chasemore Philip, <i>5, Lawn-road-villas, Doncaster.</i>
1880		*Gates, John Benjamin, A.C.A., <i>47, Warwick-street, Regent-street, W.</i>
1899		Gelling, Benjamin Richard, <i>Mutual Life Assn. of Australasia, Sydney, N.S.W.</i>
1896		Gerlich, Hermann Gustav, Dr. Jur., <i>70, Avonmore-road, West Kensington, W.</i>
1885		Gibb, Sir George S., <i>North-Eastern Railway Company, York.</i>
1889	d	Gibson, George Rutledge, <i>Tuxedo Park, New York, U.S.A.</i>
1867	c d p	*GIFFEN, SIR ROBERT, K.C.B., LL.D., F.R.S. <i>(Honorary Vice-President), Chancetonbury, Hayward's Heath.</i>

Year of Election.		
1877		Gilbert, William H. Sainsbury, 70, <i>Queen-street, Cheapside, E.C.</i>
1903	d	Ginsburg, Benedict William, M.A., LL.D., 12, <i>King's Bench Walk, E.C.</i> ; and 23, <i>Ladbroke-square, W.</i>
1900		Gladwell, Sydney William, 59, <i>Palace-street, Victoria-street, S.W.</i>
1878		*Glanville, Silvanus Goring, <i>Lloyd's, Royal Exchange, E.C.</i>
1860	c p	GLOVER, SIR JOHN, J.P., 88, <i>Bishopsgate-street Within, E.C.</i>
1888		Goad, Charles E., M. Am. and Can. Soc. C.E., 53, <i>New Broad-st., E.C.</i> ; and <i>Montreal, Canada.</i>
1901		Godfrey, Ernest Henry, <i>Woodford, Clarence-road, Harpenden.</i>
1903		Goldman, Leopold, A.I.A., F.C.A., 112—118, <i>King-street West, Toronto, Canada.</i>
1897	c d p	Gomme, George Laurence, F.S.A., 24, <i>Dorset-square, Marylebone, N.W.</i>
1884	d	*Gonner, Professor Edward C. K., M.A., <i>University College, Liverpool.</i>
1901		*Gooch, Henry Cubitt, 17, <i>Orford-square, W.</i>
1885		Goodsall, David Henry, F.R.C.S., 17, <i>Devonshire-place, W.</i>
1900	d	Goodsir, George ( <i>Weddel &amp; Co.</i> ), 16, <i>St. Helen's-place, E.C.</i>
1892		Goodwin, Alfred, M.A., 2, <i>Charles-road, St. Leonards, Sussex.</i>
1899		Gordon, Charles H. F., <i>Dhumbtour, Churt-Wynde, Hindhead.</i>
1868	c p	GOSCHEN, THE RIGHT HON. VISCOUNT, F.R.S. ( <i>Honorary Vice-President</i> ), <i>Seacroxheath, Hawkhurst, Kent.</i>
1899	d	Gouge, Herbert Dillon, <i>Public Actuary, Adelaide, S.A.</i>
1885		Goulding, William Purdham, F.S.I., 41, <i>Moorgate-st., E.C.</i>
1887		Gover, Frederic Field, 10, <i>Lee-park, Blackheath, S.E.</i>
1900		Graham, P. Anderson, 1, <i>Buxton-road, Chingford, Essex.</i>
1893		*Gray, The Hon. James McLaren, M.A., F.R.G.S., c/o R. Todd, 1, <i>York-buildings, Adelphi, W.C.</i>
1904		*Gray, Robert Kaye, 106, <i>Cannon-street, E.C.</i>
1895	d	Green, John Little, <i>Langholm, Embleton-road, Lewisham, S.E.</i>
1902		Green, Walford Davis, M.A., M.P., <i>High Garth, Balcombe, Sussex.</i>

Year of Election.		
1895		Gretton, John, M.P., <i>Stapleford Park, Melton-Mowbray.</i>
1887		Gribble, George J., <i>Henlam Grange, Biggleswade.</i>
1868		Griffith, Edward Clifton, <i>Reliance Office, 71, King William-street, E.C.</i>
1903		Groves, Joseph, M.D., M.B., M.O.H., <i>Carisbrooke, Isle of Wight.</i>
1878		Guthrie, Charles, F.C.A., <i>Queen Anne's-mansions, St. James's Park, S.W.</i>
1885	d	Guthrie, Edwin, <i>Broughton Old Hall, Manchester.</i>
1887	d p	Guyot, Yves, <i>95, Rue de Seine, Paris.</i>
1880		*Gwynne, James Eglinton A., J.P., F.S.A., <i>Folkington Manor, Polegate, Sussex.</i>
1887		Gwyther, John Howard, <i>13, Lancaster-gate, W.</i>
1892	d	Hadfield, Robert A., <i>Fairfield, Sheffield.</i>
1873	d	*Haggard, Frederick T., <i>1, Broadwater Down, Tunbridge Wells.</i>
1904		Haig, C. R., <i>The Nest, Chelmsford.</i>
1903		*Haig, Edric Wolseley, M.A., LL.M., <i>Gatehampton, Goring, Oxon.</i>
1887		Haldeman, Donald Carmichael, <i>Mutual Life Insurance Co. of New York, 17 &amp; 18, Cornhill, E.C.</i>
1883		Hall, Sir John, K.C.M.G., <i>Hororata, Canterbury, New Zealand.</i>
1897	d	Hall, Thomas, <i>Railway Commissioners' Offices, Sydney, N.S.W.</i>
1878		Hallett, Thomas George Palmer, M.A., <i>Claverton Lodge, Bath.</i>
1903		Hamilton, Charles Joseph, B.A., <i>Blackladies, Dinas Powis, Cardiff, S. Wales.</i>
1887	d	Hamilton, Sir Edward W., K.C.B., I.S.O., <i>The Treasury, Whitehall, S.W.</i>

Year of Election.		
1873	c p	Hamilton, The Right Hon. Lord George Francis, M.P., G.C.S.I., 17, <i>Montagu-street, Portman-square, W.</i>
1884		*Hammersley, Hugh Greenwood, <i>The Grove, Hampstead, N. W.</i>
1885		*Hancock, Charles, M.A., 2, <i>Cloisters, Temple, E. C.; and Reform Club, S. W.</i>
1875		Hankey, Ernest Aiers, <i>Notton, Lacock, Chippenham.</i>
1876		Hansard, Luke, 68, <i>Lombard-street, E. C.</i>
1886		*Hardcastle, Basil William, 12, <i>Gainsborough-gardens, Hampstead, N. W.</i>
1883		Harding, G. P., <i>Golfers' Club, Whitehall-court, S. W.</i>
1900		Hardingham, Frederick Robert 26, <i>East-parade, Leeds.</i>
1902		Hardy, Arthur Johnston, 52, <i>Lower Sackville-street, Dublin.</i>
1884		Hardy, George Francis, F.I.A., 7, <i>Broad Street House, E. C.</i>
1903		Harper, Augustus Yeo, 2, <i>Mount View Villas, South Tottenham.</i>
1901	d p	Harper, Edgar Josiah, <i>County Hall, Spring-gardens, S. W.</i>
1893		Harrap, Thomas, 143, <i>Stamford-street, Ashton-under-Lyne, Lancs.</i>
1868		Harris, David, <i>Lyncombe Rise, Prior Park-road, Bath.</i>
1899		Harris, Frank Drew, M.B. (Lond.), D.P.H., <i>Cowley-hill, St. Helens, Lancashire.</i>
1901		Harris, Frederic Ernest, <i>Met. Water Brd., Caxton Hall, Westminster, S. W.</i>
1897		Harris, Walter Fred., F.I.C.A., 16, <i>Parliament-street, Hull.</i>
1887		Harris, William A., F.R.S.S.A., <i>Phœnix Chambers, Exchange, Liverpool.</i>
1882	p	Harris, William James, <i>Halwill Manor, Beaworthy, N. Devon.</i>
1902		Hart, Francis John Henning, 301, <i>Pitt-street, Sydney, N.S. W.</i>
1900	p	Hartley, Edwin Leach, B.A., 1, <i>Paper-buildings, Temple, E. C.</i>
1881	c	HARVEY, ALFRED SPALDING, B.A., 67, <i>Lombard-street, E. C.</i>
1899		Harvey, Baldwin S., 67, <i>Lombard-street, E. C.</i>
1896		Hawkins, Willoughby R., <i>Bute Docks, Cardiff.</i>

Year of Election.		
1897		Hayakawa, S., 69, <i>Nagatacho-Nichome, Tokio, Japan.</i>
1895	d	Haynes, Thomas Henry, 1, <i>Endsleigh-terrace, Tavistock.</i>
1898	d p	Hayward, Thomas Ernest, M.B. (Lond.), F.R.C.S., <i>Clipsley Lodge, Haydock, near St. Helens.</i>
1896		*Heaton-Armstrong, William Charles, J.P., 30, <i>Portland-place, W.</i>
1884		Hedley, Robert Wilkin, 41, <i>Parliament-street, Westminster, S.W.</i>
1889		*Hemming, Arthur George, F.I.A. ( <i>London Ass. Corporation</i> ), 7, <i>Royal Exchange, E.C.</i>
1865		Hendriks, Augustus, F.I.A., 6, <i>Observatory-gardens, Kensington, W.</i>
1855	c d p	*HENDRIKS, FREDERICK, F.I.A. ( <i>Vice-President</i> ), 7, <i>Vicarage-gate, Kensington, W.</i>
1898		Herring, George, 1, <i>Hamilton-place, Piccadilly, W.</i>
1890	d	Hewins, Professor W. A. S., M.A., <i>The Rowans, Putney Lower Common, S.W.</i>
1886		Hibbert, Sir Henry F., 8, <i>Park-road, Chorley, Lancashire.</i>
1892	c d p	*Higgs, Henry, LL.B., <i>The Treasury, Whitehall, S.W.</i>
1878		*Hill, Frederick Morley, 22, <i>Richmond-road, Barnsbury, N.</i>
1904		Hill, William Edward, <i>Windsor-place, Shrewsbury.</i>
1900		Hillingdon, The Right Hon. Lord, 67, <i>Lombard-street, E.C.</i>
1903		Hiscock, Elias John, 65, <i>Southgate-road, N.</i>
1904		Hobson, John Atkinson, <i>Etmstead, Limpfield.</i>
1897	d	Hodgson, William Gill, F.S.A.A., <i>Bamford, via Sheffield.</i>
1888		Hollams, Sir John, 52, <i>Eaton-square, S.W.</i>
1895		Holland, Hon. Lionel Raleigh, B.A., 75, <i>Eaton-square, S.W.</i>
1898		Holland, Robert Martin, 68, <i>Lombard-street, E.C.</i>
1894	d p	Hollerith, Herman, Ph.D., &c., 1054, <i>31st-street, Washington, D.C., U.S.A.</i>
1900		Holliday, John, M.A., F.I.A. ( <i>New York Life Ass. Co.</i> ), 221, <i>Caixa do Correio, Rio de Janeiro.</i>
1901		Holmes, Richard Henry, J.P. (Alderman), 10, <i>Royal Arcade, Newcastle-on-Tyne.</i>
1891	d	Hooker, Sir Joseph Dalton, G.C.S.I., F.R.S., &c., <i>The Camp, Sunningdale.</i>

Year of Election.		
1895	d p	*Hooker, Reginald Hawthorn, M.A., 3, <i>Gray's Inn-place, W.C.</i>
1896		Hooper, Angus W., <i>Montreal, Canada.</i>
1904		Hooper, Frederick Tungate, 77—79, <i>New Briggate, Leeds.</i>
1879		Hooper, George Norgate, <i>Elmleigh, Hayne-road, Beckenham, Kent.</i>
1903	d	Hooper, William George, 111, <i>Musters-road, West Bridgford, Nottingham.</i>
1878	c d p	Hooper, Wynnard, 13, <i>Sumner-place, Onslow-square, S. W.</i>
1887		Hopkins, John, <i>Little Boundes, Southborough, Kent.</i>
1899		Hopkins, John Castell, 90, <i>Wellington-street West, Toronto.</i>
1902		Hopwood, Sir Francis John Stephen, K.C.B., C.M.G., <i>Board of Trade, Whitehall-gardens, S. W.</i>
1894		Houldsworth, Sir William H., Bart., M.P., 35, <i>Grosvenor-place, S. W.</i>
1883		Howell, Francis Buller, <i>Ethy, Lostwithiel, Cornwall.</i>
1897	p	Howell, Price, <i>Lindfield, near Sydney, N.S.W.</i>
1900		Howell, Walter J., C.B., <i>Board of Trade, 7, Whitehall-gardens, S. W.</i>
1874	c d p	HUMPHREYS, NOEL ALGERNON, I.S.O. ( <i>Hon. Secretary</i> ), <i>General Register Office, Somerset House, Strand.</i>
1893		Humphreys-Owen, Arthur Charles, M.P., <i>Glanservan, Garthmyl, Montgomeryshire.</i>
1903		Hunt, Arthur Leonard, <i>West Heath Mount, Hermitage-lane, Hampstead, N.</i>
1883		Hunt, Richard Aldington, A.I.A., <i>County-buildings, Corporation-street, Birmingham.</i>
1903		Hunter, Arthur, 346, <i>Broadway, New York, U.S.A.</i>
1888		Hunter, George Burton, <i>Wallsend-on-Tyne.</i>
1902	p	Hutchins, Miss Bessie Leigh, <i>The Glade, Branch-hill, Hampstead-heath, N.W.</i>
1888		Hyde, Clarendon G., 75, <i>Gloucester-terrace, Hyde-park, W.</i>
1887		Hyde, Henry Barry, 5, <i>Eaton-rise, Ealing, W.</i>
1901		Hyde, Hugh Vivian, <i>Board of Agriculture and Fisheries, 3, St. James's-square, S. W.</i>
1893	d	Hyde, Hon. John, 1458, <i>Euclid-place, Washington, D.C., U.S.A.</i>



Year of Election.		
1897		Ingall, Godefroi Drew, 97, <i>Dashwood House, New Broad-street, E.C.</i>
1874	<i>d p</i>	*Ingall, William Thomas Fitzherbert Mackenzie, "Invermark," <i>Limpsfield, Surrey.</i>
1869		*Inglis, Cornelius, M.D., <i>Athenæum Club, S. W.</i>
1903		Innes, Alfred Mitchell, <i>Under Sec. of State for Finance, Cairo, Egypt.</i>
1901		Ireland, Alleyne (c/o Dr. Edward E. Thorpe), 711, <i>Boylston-street, Boston, Mass., U.S.A.</i>
1887		Irvine, Somerset William D'Arcy, J.P., <i>Equitable Life Office of United States, Sydney.</i>
1864		*Ivey, George Pearse, 53, <i>Denmark-villas, Hove.</i>
1903		Jack, Robert Robertson, <i>Molesworth-street, Lismore, N.S. W.</i>
1902	<i>d</i>	Jagger, John William, <i>Cape Town.</i>
1894	<i>d</i>	Jamieson, George, C.M.G., <i>The Thatched House Club, St. James's-st., S. W.</i>
1872	<i>c d p</i>	Janson, Frederick Halsey, F.L.S., 22, <i>College-hill, Cannon-street, E.C.</i>
1897	<i>d</i>	Jay, E. Aubrey Hastings, <i>Tower House, Woolwich.</i>
1896	<i>d</i>	Jenney, Charles Albert, 58, <i>William-street, New York City, U.S.A.</i>
1881		*Jersey, The Right Hon. the Earl of, G.C.B., <i>Osterley-park, Isleworth.</i>
1881		Johnson, Edwin Eltham, 110, <i>Cannon-street, E C.</i>
1891	<i>d</i>	Johnson, George, 2, <i>Ladysmith-road, Wealdstone.</i>

Year of Election.		
1888		Johnson, John Grove, 23, <i>Cross-street, Finsbury, E.C.</i>
1878	d	Johnstone, Edward, <i>Queensbury, South-road, Clapham-park, S.W.</i>
1900		Jones, A. S. J. Warren, <i>c/o Messrs. Henry S. King &amp; Co., 65, Cornhill, E.C.</i>
1877		Jones, Theodore Brooke, 70, <i>Gracechurch-street, E.C.</i>
1888	d	*Jordan, William Leighton, <i>Thatched House Club, St. James's-street, S.W.</i>
1889		Justican, Edwin, F.I.A., <i>St. Mildred's House, Poultry, E.C.</i>
1902		Kains-Jackson, Charles Philip Castle, 24, <i>Sheen-park, Richmond.</i>
1885		Keen, William Brock, 8, <i>Church-court, Old Jewry, E.C.</i>
1884		Kelly, Edward Festus, 182—184, <i>High Holborn, W.C.</i>
1883	c d	Keltie, John Scott, F.R.G.S., LL.D., 15, <i>Neville-court, Abbey-road, N.W.</i>
1884	d	Kemp, John, 46, <i>Cannon-street, E.C.</i>
1884	c d	*Kennedy, Sir Charles Malcolm, K.C.M.G., C.B., 4, <i>Louisa-terrace, Exmouth, South Devon.</i>
1878		Kennedy, J. Murray, <i>New University Club, St. James's-street, S.W.</i>
1901		*Kennedy, Pitt, 39, <i>Palace-gardens-terrace, W.</i>
1898		Kent, Arthur C., 47, <i>Buckingham Palace-road, S.W.</i>
1899		Kershaw, John Baker C., F.I.C., <i>West Lancs. Laboratory, Waterloo, Liverpool.</i>
1883		*Keynes, John Neville, M.A., D.Sc., 6, <i>Harvey-road, Cambridge.</i>
1884		Kimber, Sir Henry, Bart., M.P., 79, <i>Lombard-street, E.C.</i>
1898	c d	*KING, ARTHUR WILLIAM WATERLOW, <i>Orchard House, Gt. Smith-st., Westminster, S.W.</i>

Year of Election.		
1883	p	*King, Bolton, M.A., <i>Gaydon, Warwick.</i>
1894		*Kirkcaldy, William Melville, <i>Dunedin, Otago, New Zealand.</i>
1888		*Kitson, Sir James, Bart., M.P., J.P., <i>Gledhow Hall, Leeds.</i>
1889		Kloetgen, W. J. H., <i>34, Gutter-lane, Cheapside, E.C</i>
1899	d	Knight, John Martin, <i>Christdene, Wanstead Pk.-av., Wanstead Park, E.</i>
1878		*Kusaka, Yoshio, <i>First National Bank, Tokio, Japan.</i>
1902	d	Lahitte, Emilio, <i>Departimento de Agricultura, Casa de Gobierno.</i> <i>Buenos Aires.</i>
1901		Lakin-Smith, Herbert, <i>44, Waterloo-street, Birmingham.</i>
1903		Lance, Charles Carey, <i>33—5, Eastcheap, E.C.</i>
1898		Lander, Mrs. Beatrice, B.Sc., <i>108, Rouge Bouillon, St. Helier, Jersey.</i>
1902		Lark, Albert Ernest, F.C.A., <i>2, South Quay, Great Yarmouth.</i>
1885	d	Latham, Baldwin, M.Inst. C.E., <i>Parliament-mansions, Victoria-street, S.W.</i>
1897	d	*Lawrence, Frederick William, M.A., <i>Mansfield House, Canning Town, E.</i>
1904		Lawson, Rev. Herbert J., <i>The Lawn, Diss, Norfolk.</i>
1890	d	Lawson, William Ramage, <i>Finchley Lodge, North Finchley.</i>
1883	d	*Leadam, Isaac Saunders, M.A., <i>1, The Cloisters, Temple, E.C.; and Reform</i> <i>Club, S.W.</i>
1902		Leah, Samuel Dawson, I.S.O., <i>18, Applegarth-road, Brook Green, W.</i>
1886		Leathes, Stanley M., <i>4, Clement's Inn, W.C.</i>
1879		*Leete, Joseph, <i>36, St. Mary-at-hill, E.C.; and Eversden, S.</i> <i>Norwood-park.</i>

Year of Election.		
1899		L'Estrange, Charles James ( <i>Blackie and Son, Ltd.</i> ), 17, <i>Stanhope-street, Glasgow.</i>
1887		Leitch, Alexander ( <i>Scottish Provident Institution</i> ), 17, <i>King William-street, E.C.</i>
1892		Leon, Herbert Samuel, <i>Bletchley-park, Bletchley, Bucks.</i>
1888		*Le Poer-Trench, Col. The Hon. W., R.E., J.P., 3, <i>Hyde Park-gardens, W.</i>
1887		*Le-Roy-Lewis, Lieut.-Colonel Herman, B.A., D.S.O., <i>Westbury House, Petersfield, Hants.</i>
1898		Leveaux, Arthur Michael, A.I.A., 28, <i>Abingdon-street, Westminster, S.W.</i>
1903	d	Levy, Dr. Hermann, <i>Rauchstrasse, 17, Berlin, W. 10.</i>
1862		Lewis, Robert, 1, <i>Bartholomew-lane, E.C.</i>
1888		*Liberty, A. Lasenby, <i>The Manor House, The Lee, near Gt. Missenden.</i>
1884		*Lines, William Edward, <i>c/o Rev. H. Lines, Golant Vicarage, Par Station, Cornwall.</i>
1902		Litchfield, Frederick, 38, <i>Whitehall Park, Hornsey-lane, N.</i>
1898		Litkie, Valerian A., 39, <i>South-street, W.</i>
1892		Llewelyn, Sir John T. D., Bart., <i>Penllergare, Swansea.</i>
1903		Lloyd, Godfrey Isaac Howard, <i>University College, Sheffield.</i>
1879		Lloyd, Wilson, J.P., F.R.G.S., <i>Park Lane House, Wood-green, Wednesday.</i>
1888	c d p	LOCH, CHARLES S., B.A. (Vice-President), <i>Drylaw Hatch, Oxshott, Leatherhead.</i>
1882	c d p	*Longstaff, George Blundell, M.A., M.D., F.R.C.P., <i>Highlands, Putney Heath, S.W.</i>
1876		*Lornie, John Guthrie, J.P. (of Birnam & Pitcastle), <i>Rosemount, Kirkcaldy, N.B.</i>
1892	d	Lough, Thomas, M.P., 14, <i>Dean's-yard, Westminster, S.W.</i>
1886		*Low, Malcolm, 22, <i>Roland-gardens, S.W.</i>
1895		Lowe, Thomas Enoch, F.S.A.A., 89, <i>Darlington-street, Wolverhampton.</i>
1901		Lumb, Charles F., <i>Real Estate Trust Buildings, Philadelphia, U.S.A.</i>
1903		Lunge, Ernest, LL D., 18, <i>Southampton-mansions, Southampton-row, W.C.</i>
1904		Lutternveld, Willem Margriet Johan van, <i>Schiedamsche Singel, Rotterdam, Holland.</i>

# LIST OF FELLOWS.

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Year of Election.		
1875		
1873		*Mabson, Richard Rous, "Statist" Office, 51, Cannon-street, E.C.
1894		*Macandrew, William, J.P., Westwood House, near Colchester.
1888		Macaulay, Thomas Bassett, Sun Life Assurance Co., Montreal, Canada.
1903		McCankie, James, 63, George-street, Edinburgh.
1902		MacConochie, William Pitt, 4, Lothbury, E.C.
1897		Macdonald, John Hutcheson, 4, Lothbury, E.C.
1898		MacDonald, Mrs. Margaret Ethel, 3, Lincoln's Inn Fields, W.C.
1872	c d p	*Macdonald, Robert Alexander, Royal Bank of Scotland, Edinburgh.
1873		MACDONELL, SIR JOHN, C.B., LL.D., Room 183, The Royal Courts of Justice, W.C.
1899	d	*McEwen, Laurence T., c/o. R. A. McLean, 1, Queen Victoria-st., E.C.
1902		McHardy, Coghlan McLean, J.P., 1, Grenville-place, Cromwell-road, S. W.
1900	c	Machin, Stanley, 103, Broad-street, Ratcliff, London, E.
1886		Mackay, Thomas, 14, Wetherby-place, S. W.
1878		*Mackenzie, Colin, F.R.G.S.,
1876		McKewan, William, Elmsfield, Bickley, Kent.
1900		*McLean, Robert Allan, F.R.G.S., 1, Queen Victoria-street, E.C.
1888	d	Macleod, Reginald, C.B., Scottish Office, Whitehall, S. W.
1882		McNiel, Henry, 18, Exchange-street, Manchester.
		MacRosty, Alexander, West Bank, Esher.

Year of Election.		
1904		Macrosty, Henry William, B.A., 29, <i>Hervey-road, Blackheath, S.E.</i>
1899		*MacWharrie, Niel Matheson, <i>Conservative Club, St. James's, S.W.</i>
1891		Maidment, Thomas, <i>Insurance Chambers, King's-road, Southsea.</i>
1904		Mallet, Bernard, 38, <i>Rutland-gate, S.W.</i>
1902	d	Mandello, Julius George, Ph.D. <i>Pressbourg, Hungary.</i>
1902		Mansfield, The Right Hon. the Earl of, <i>Scone Palace, Perth, N.B.</i>
1884		*Manson, Frederick William,
1888		Manuel, James, 36, <i>Vittoria-street, Ottawa, Canada.</i>
1880	c d p	*Marshall, Professor Alfred, M.A., <i>Balliol Croft, Madingley-road, Cambridge.</i>
1887		Marshall, W. Bayley, M.Inst.C.E., M.Inst.M.E., <i>Struan, Richmond Hill, Edgbaston, Birmingham.</i>
1887		Martin, James, 4, <i>King-street, Cheapside, E.C.</i>
1899		Martin, John Roxburgh, <i>St. Stephen's-av., Parnell, Auckland, N. Zealand.</i>
1872	c d p	*MARTIN, RICHARD BIDDULPH, M.A., M.P. (Treasurer), <i>Overbury-court, Tewkesbury, and 68, Lombard-street, E.C.</i>
1884		Mason, William Arthur, 31a, <i>Colmore-row, Birmingham.</i>
1898		Massingberd, Stephen, B.A., <i>Gunby Hall, Burgh, Lincolnshire.</i>
1875		*Mathers, John Shackleton,
1903		Mayer, Dr. Clemens, 27, <i>Potsdamerstrasse, Berlin, W. 35.</i>
1901		Meakin, George Healey, A.S.A.A., <i>Town Hall, Islington, N.</i>
1882		Medhurst, John Thomas, F.S.A.A., <i>City of London College, White-street, Moor-fields, E.C.</i>
1901		Meredith, Hugh Owen, 39, <i>Fellows-road, Hampstead, N.W.</i>
1884	d	Merton, Zachary, 6, <i>Green-street, Park-lane, W.</i>
1900		Miller, John W., <i>Union Club, S.W.</i>
1892	c d	Milner, His Excellency Viscount, G.C.B. G.C.M.G., <i>Government House, Johannesburg.</i>
1882	p	Milnes, Alfred, M.A., 44, <i>Goldhurst-terrace, S. Hampstead, N.W.</i>

Year of Election.		
1874		*Mocatta, Frederick D., F.R.G.S., 9, <i>Connaught-place, W.</i>
1878		Moffat, Robert J., <i>The Lodge, Waterbeach, Cambridgeshire.</i>
1902		Molesworth, Sir Guilford Lindsey, K.C.I.E., <i>The Manor House, Bezxley, Kent.</i>
1888	d	*Molloy, William R. J., M.R.I.A. ( <i>National Education Board</i> ), 78, <i>Kenilworth-square, Rathgar, Dublin.</i>
1899		*Moon, Edward Robert Pacy, M.P., 6, <i>Onslow Gardens, W.</i>
1887		Moore, Arthur Chisholm, 23, <i>Essex-street, Strand, W.C.</i>
1874		Moore, Charles Rendall, 43, <i>Breakspears-road, St. Johns, S.E.</i>
1878		*Moore, John Byers Gunning, <i>Loymount, Cookstown, Ireland.</i>
1903		Moores, George, 11, <i>Carter-terrace, Greenhays, Manchester</i>
1902		Morgan, George Frederick Hughes, 66, <i>Grafton-road, Acton.</i>
1893	d	Morgan, Percy Charlton, <i>Queen Anne's Chambers, S. W.</i>
1902	p	Morison, Theodore, M.A., <i>Principal M. A.-O. Coll., Aligarh, U.P., India.</i>
1888		Morris, John (17, <i>Throgmorton-avenue, E.C.</i> ), 34, <i>Hyde Park-square, W.</i>
1899		Morris, Thomas Morgan, 12, <i>Green-street, Neath, South Wales.</i>
1891	c d p	Morrison, Rev. William Douglas, LL.D., 2, <i>Embankment-gardens, Chelsea, S. W</i>
1904		Mosely, Alfred, C.M.G., <i>West Lodge, Hadley Wood, Barnet.</i>
1885		*Mosley, Toninan, <i>Rangors, Iver, Uxbridge.</i>
1886	c	Mowbray, Sir Robert Gray Cornish, Bart., M.P., 10, <i>Little Stanhope-street, S. W.</i>
1886	d	Moxon, Thomas B., <i>Lancs. and Yorks. Bank, King-st., Manchester.</i>
1904		Mudie-Smith, Richard, 43, <i>Lauderdale-mansions, Maida Vale, W.</i>
1883		Muirhead, Henry James, <i>Fairfield, Hythe, Kent; and Reform Club, S. W.</i>
1899	d	Muirhead, James Muirhead Potter, <i>P.O. Box 573, 44, St. George's street, Cape Town.</i>
1899		Mukerji, Benoy Vehari, B.A., B.Litt., <i>Municipal Board, Mainpuri, U.P., India.</i>
1897	d	Mullins, George Lane, M.A., M.D., <i>Murong, Albion-street, Waverley, Sydney, N.S. W.</i>

Year of Election.		
1891	<i>i</i>	Murphy, Sir Shirley Foster, M.R.C.S., 9, <i>Bentinck-terrace, Regent's-park, N. W.</i>
1878	<i>d</i>	Murray, Adam, <i>Hazeldean, Kersal, Manchester.</i>
1878		*Nathan, Henry,
1869	<i>c d p</i>	NEISON, FRANCIS GUSTAVUS PAULUS, F.I.A., 93. <i>Adelaide-road, South Hampstead.</i>
1877		Nevill, Charles Henry, 1 and 2, <i>Great Winchester-street, E. C.</i>
1900		Newcomb, Harry T., LL.M., <i>Room 700, Bond-bldg., Washington, D. C., U. S. A.</i>
1894		Newey, William Lewis, 53, <i>Waverley-road, Small Heath, Birmingham.</i>
1889	<i>d p</i>	Newsholme, Arthur, M.D., 11, <i>Gloucester-place, Brighton.</i>
1895	<i>c</i>	*Nicholson, Charles Norris, 35, <i>Harrington-gardens, South Kensington, S. W.</i>
1878	<i>d p</i>	Nicholson, Professor J. Shield, M.A., D.Sc., <i>University of Edinburgh.</i>
1858	<i>d</i>	Nightingale, Miss Florence, 10, <i>South-street, Park-lane, W.</i>
1871		*Noble, Benjamin, F.R.A.S., <i>Westmorland House, Low Fell, Gateshead.</i>
1902		Norman, Frederick Charles ( <i>Irish Provident Ass. Co.</i> ), <i>Cranleigh, Egham-hill, Egham, Surrey.</i>
1889		Northampton, The Most Hon. the Marquess of, 51, <i>Lennox-gardens, S. W.</i>



Year of Election.		
1888		Oakley, Sir Henry, 37, <i>Chester-terrace, Regent's-park, N.W.</i>
1898		O'Connor, Percival C. Scott, <i>Chapra, Bengal, India.</i>
1893		O'Connor, Vincent C. Scott, <i>Authors' Club, 3, Whitehall-court; and c/o W Watson &amp; Co., 7, Waterloo-place, S.W.</i>
1886	d	O'Connor, James Edward, C.I.E., 144, <i>Church-road, Upper Norwood, S.E.</i>
1880		*Oelsner, Isidor, 31, <i>Holland Villas-road, Kensington, W.</i>
1901		Offen, Charles Rose Witcher, <i>Bloomsbury House, Queen-square, W.C.</i>
1885	o d p	Ogle, William, M.A., M.D., F.R.C.P., &c., 10, <i>Gordon-street, Gordon-square, W.C.</i>
1885	d	*Oldham, John ( <i>River Plate Telegraph Co.</i> ), 287, <i>San Martin, Buenos Aires.</i>
1904		Olmsted, Victor H., <i>The Plymouth, Washington, D.C., U.S.A.</i>
1896		Olney, George Washington, LL.B., 58, <i>William-street, New York City, U.S.A.</i>
1892	c	Onslow, The Right Hon. the Earl of, G.C.M.G., <i>Clandon-park, Guildford, Surrey.</i>
1878		Oppenheim, Henry, 16, <i>Bruton-street, Bond-street, W.</i>
1899		Ormsby, John Yeaden, <i>Ontario Mutual Life Ass.Co., Woodstock, Ontario.</i>
1894	d	Owen, Edgar Theodore, <i>Registrar of Friendly Societies, Perth, W.A.</i>
1887	d	Owen, Evan Frederick, A.I.A., <i>Actuary for Friendly Societies, Melbourne.</i>
1887	d	*Page, Edward D. ( <i>Faulkner, Page, &amp; Co.</i> ), 60, <i>Worth-street, New York City.</i>
1899	d	Paish, George, <i>"Statist" Office, 51, Cannon-street, E.C.</i>
1866	c d p	*Palgrave, Robert Harry Inglis, F.R.S., <i>Belton, Great Yarmouth, Norfolk.</i>
1888		Pannell, William Henry, F.C.A., <i>Library Chambers, Basinghall-street, E.C.</i>

Year of Election.		
1901		Parisot, Oscar La Valette, "Daisycroft," Caterham, Surrey.
1878		Park, David Francis, C.A., F.F.A., A.I.A., 39, Lombard-street, E.C.
1903		Parker, Sir Gilbert, M.P., 20, Carlton House-terrace, S.W.
1878		Parry, Thomas, Grafton House, Ashton-under-Lyne.
1883		Paterson, John, 1, Walbrook, E.C.
1888		Pattullo, James Durie, 65, London Wall, E.C.
1877		Paul, Henry Moncreiff, 12, Lansdowne-crescent, Notting-hill, W.
1878	d	Paulin, David, 6, Forres-street, Edinburgh.
1893	d	Payne, Alexander William, F.C.A., 70, Finsbury-pavement, E.C.
1884		*Peace, Sir Walter, K.C.M.G., 26, Victoria-street, Westminster, S.W.
1895		Peixotto, M. Percy (U.S. Equitable Life Office), 36 <sup>bis</sup> , Avenue de l'Opéra, Paris.
1903		Pekelharing, Dr. G., 8, Zeemansstraat, Rotterdam.
1891	d	Penn-Lewis, William, The Woodlands, Great Glen, near Leicester.
1894	d	Perris, George Herbert (Literary Agency of London), 5, Henrietta-street, W.C.
1902	d	Peters, Edward T. (U.S. Dept. of Agriculture), 58, Saverne-road, Hampstead, N.W.
1890		Peters, John Wyatt, 5, King's-road, Southsea.
1883		Petheram, Frederick William, F.C.A., Moorfield-chmbrs., 95, Finsbury-pavement, E.C.
1886		Peto, Sir Henry, Bart., M.A., Chedington Court, Misterton, Crewkerne, Somersetshire.
1887		Phelps, Lieut.-General Arthur, 23, Augustus-road, Edgbaston, Birmingham.
1886	d	*Phelps, The Rev. Lancelot Ridley, M.A., Oriol College, Oxford.
1871	d	*Pickering, John, F.R.G.S., F.S.A., 86, Thicket-road, Anerley, S.E.
1898		Pietersen, James Frederick Gerhard, L.R.C.P., M.R.C.S., Ashwood House, Kingswinford, Dudley.
1900		Pigou, Arthur Cecil, M.A., King's College, Cambridge.
1904		Pilling, John Albert, c/o Messrs. Deloitte & Co., 4, Lothbury, E.C.

Year of Election.		
1878	d	*Pim, Joseph Todhunter, <i>Rinnamara, Monkstown, Co. Dublin.</i>
1886		Pink, J. Francis, <i>62, Chandos-street, Strand, W.C.</i>
1903		Pirrie, The Right Hon. William James, P.C., LL.D., <i>Downshire House, Belgrave-square, S.W.</i>
1890	c d	Pittar, Thomas John, C.B., C.M.G., <i>H.M. Custom House, E.C.</i>
1881		Planck, Charles, M.R.C.S. ( <i>Deputy Surgeon-General</i> ), <i>Lyden Croft, Edenbridge, Kent.</i>
1902		Plant, Alfred Thomas, <i>Accountant's Office, G.W.R., Paddington.</i>
1883	d	Platt, James, <i>19, Roslyn Hill, Hampstead, N.W.</i>
1895		Platt-Higgins, Frederick, M.P., <i>Queen Anne's-mansions, St. James's-park, S.W.</i>
1901		Plender, William, <i>4, Lothbury, E.C.</i>
1861	c d	Plowden, Sir William Chicele, K.C.S.I., <i>5, Park-crescent, Portland-place, W.; and Aston Rowant House, Tetsworth, Oxon.</i>
1896		*Pontifex, Bryan, A.C.A., <i>East India Railway House, Calcutta.</i>
1891		Pope, Henry Richard, <i>Idlesleigh Mansions, Westminster, S.W.</i>
1891		Potter, Henry, <i>222, Queen's-road, New Cross Gate, S.E.</i>
1879	c d	*POWELL, SIR FRANCIS SHARP, BART., M.P., ( <i>President</i> ), <i>Horton Old Hall, Bradford, and 1, Cambridge-square, Hyde-park, W.</i>
1871		Power, Edward, <i>16, Southwell-gardens, South Kensington, S.W.</i>
1877		*Prance, Reginald Heber, <i>Frognaal, Hampstead, N.W.</i>
1877	d	Praschkauer, Maximilian, <i>Queen Anne's Mansions, St. James's-park, S.W.</i>
1867		*Pratt, Robert Lindsay, <i>80, Bondgate, Darlington.</i>
1896		Pretyman, Captain Ernest George, M.P., <i>Orwell-park, Ipswich.</i>
1887	c d p	*PRICE, L. L., M.A., <i>Oriel College, Oxford.</i>
1877	c d p	Price-Williams, Richard, M.Inst.C.E., <i>18, Chandos-road, Willesden Green.</i>
1897	d	Primrose, Sir Henry William, K.C.B., C.S.I., <i>Inland Revenue Office, Somerset House, W.C.</i>
1887	c d p	PROBYN, LESLIE CHARLES, <i>79, Onslow-square, S.W.</i>
1889		Probyn, Lieut.-Colonel Clifford, <i>55, Grosvenor-street, Grosvenor-square, W.</i>

Year of Election.		
1886		Provand, Andrew Dryburgh, 2, <i>Whitehall-court</i> , <i>S.W.</i>
1896		Pryor, Edward Thomas, 23, <i>Fore-street</i> , <i>E.C.</i>
1902		Puckle, Raymond Aufiere, 19, <i>de Crespiigny-park</i> , <i>London, S.E.</i>
1871	c	Puleston, Sir John Henry, 44, <i>Coleman-street</i> , <i>E.C.</i>
1901		Quin, Stewart Blacker, F.C.A., 1, <i>Lombard-street</i> , <i>Belfast</i> .
1883		Rabbidge, Richard, F.C.A., 32, <i>Poultry</i> , <i>E.C.</i>
1872	d p	*Rabino, Joseph, <i>Chief Manager, Imperial Bank of Persia, Teheran.</i>
1888		*Radcliffe, Sir David, J.P., <i>Rosebank, Knowsley, Prescott.</i>
1858		*Radstock, The Right Hon. Lord, <i>Mayfield, Woolston, Southampton.</i>
1885	c d	Rae, John, M.A., 1, <i>Rockland-road</i> , <i>Putney, S.W.</i>
1900	d p	Raffalovich, Alexis, <i>Gr. Morskaja</i> , 53/8, <i>St. Petersburg.</i>
1887	d p	Raffalovich, His Excellency Arthur, 19, <i>Avenue Hoche</i> , <i>Paris.</i>
1880	c	Rankin, Sir James, Bart., M.P., 35, <i>Ennismore-gardens</i> , <i>Prince's-gate, S.W.</i>
1897		Ranson, Albert, 32, <i>Westgate-street</i> , <i>Ipswich.</i>
1903		Rathbone, Miss Eleanor F., <i>Green Bank. Liverpool.</i>
1874	c d p	*Ravenstein, Ernest George, F.R.G.S., 2, <i>York-mansions</i> , <i>Battersea-park, S.W.</i>

Year of Election.		
1877		*Rawlins, Thomas, 45, <i>King William-street, E.C.</i>
1895		Rawlinson, Albert, 22, <i>Ryder-street, St. James's, S.W.</i>
1893		Rea, Charles Herbert Edmund, 223, <i>Norwood-road, Herne-hill, S.E.</i>
1889		*Reed, Thomas, F.C.A., 63, <i>King-street, South Shields.</i>
1903		Reilly, John, 17, <i>Nassau-street, Dublin.</i>
1888	c d p	REW, R. HENRY (Hon. Secretary), <i>Board of Agriculture and Fisheries, 3, St. James's-square, S.W.</i>
1886		Rhens, Robert, 77, <i>Amhurst-road, Hackney, N.E.</i>
1888		Rhodes, George Webber, 131, <i>Wool Exchange, E.C.</i>
1895		Richards, Roger C. (Inner Temple), 14D, <i>Hyde Pk. Mansions, Marylebone-rd., W.C.</i>
1899		Richardson, George Henry, F.C.I.S.,
1895		Richardson, Sir Thomas, <i>Kirklevington Grange, Yarm, Yorks.</i>
1903		Ripon, The Right Rev. the Lord Bishop of, <i>The Palace, Ripon.</i>
1873		Ripon, The Most Hon. the Marquess of, K.G., F.R.S., 9, <i>Chelsea Embankment, S.W.</i>
1892		Rivington, Francis Hansard, 44, <i>Connaught-square, W.</i>
1882		Roberts, Edward, F.R.A.S. ( <i>Nautical Almanac Office</i> ), 3, <i>Verulam-buildings, Gray's Inn, W.C.</i>
1894	d p	Robertson, James Barr, <i>National Liberal Club, S.W.</i>
1900		Robinson, James, <i>Clarendon House, Clayton-st. W., Newcastle-on-Tyne.</i>
1904		Rogers, Arthur George Liddon, M.A., <i>Board of Agriculture and Fisheries, 4, Whitehall-place, S.W.</i>
1901	d	Rogers, John Innes, 119, <i>Cannon-street, E.C.</i>
1880		*Ronald, Byron L., 14, <i>Upper Phillimore-gardens, W.</i>
1873	c	*Rosebery, The Rt. Hon. the Earl of, K.G., K.T., F.R.S., 38, <i>Berkeley-square, W.</i>
1904		Rosenbaum, Simon, 18, <i>The Avenue, Bedford-park, W.</i>
1892	d	Ross, Charles Edmonstone, F.S.A.A., <i>Public Works Department, Chempauz, Madras.</i>

Year of Election.		
1900		Ross, John Howlett ( <i>Australian Financial Gazette</i> ), <i>Queen-street, Melbourne, Victoria.</i>
1897		Rothwell, William Thomas, J.P., <i>Newton Heath, near Manchester.</i>
1904		Routly, William Henry, <i>Borough Accountant, Folkestone.</i>
1899	d	Rowntree, Benjamin Seebohm, <i>32, St. Mary's, York.</i>
1898	d p	Rozenraad, Cornelius, <i>4, Moreton-gardens, Kensington, W.</i>
1890		Ruffer, Marc Armand, M.A., M.D., B.Sc., <i>Ramleh, Egypt.</i>
1903		Runciman, Walter, M.A., M.P., <i>West Denton Hall, Scotswood-on-Tyne.</i>
1888	d	Rusher, Edward Arthur, F.I.A., <i>142, Holborn Bars, E.C.</i>
1886		Russell, Arthur B., F.C.A. (11, <i>Ludgate-hill, E.C.</i> ), <i>17, Rosslyn-hill, Hampstead, N.W.</i>
1878	d	Russell, Richard F., <i>8, John-street, Adelphi, W.C.</i>
1902		Ruttkay, W. de, LL.D. ( <i>Austro-Hungarian Consulate</i> ), <i>22, Laurence Pountney-lane, E.C.</i>
1894	d	Sachs, Edwin Otho, <i>3, Waterloo-place, Pall Mall, S.W.</i>
1898	d	Salmon, Richard George, F.I.A., <i>Sun Life Ass. Soc., Threadneedle-st., E.C.</i>
1875	d	*Salomons, Sir David Lionel, Bart., J.P., <i>Broom-hill, Tunbridge Wells.</i>
1868	c	Samuelson, The Rt. Hon. Sir Bernhard, Bart., F.R.S., <i>56, Prince's-gate, Hyde-park, S.W.</i>
1899	d	Sanderson, Frank, M.A., <i>Canada Life Ass. Co., Toronto, Canada.</i>
1895		Sanger, Charles Percy, M.A., <i>453, Strand, W.C.</i>
1891		*Sarda, Pandit Har Bilas, B.A., M.R.A.S., <i>Government College, Ajmere, India.</i>
1886	d p	Sauerbeck, Augustus ( <i>Helmuth Schwartz &amp; Co.</i> ), <i>3 &amp; 4, Moorgate-street-buildings, E.C.</i>
1893		Saunders, Cecil Roy, <i>Eling House, Eling, Hants.</i>

Year of Election.		
1887		*Scarth, Leveson, M.A., 12, York-buildings, Adelphi, W.C.
1877		Schiff, Charles, 22, Loundes-square, S. W.
1902		Schindler, Walter, 144, Mitcham-lane, Streatham, S. W.
1904		Schlesinger, Louis G., 12A, Avenida Sur 16B, Guatemala.
1891	d p	*Schloss, David F., M.A., Hill House, Wimbledon.
1895		Schmidt, Hermann ( <i>Deutsche Bank</i> ), Lombard House, George-yard, Lombard-st., E.C.
1891	p	Schooling, John Holt, Fotheringhay Hse., Montpelier-row, Twickenham.
1895		Schuurman, Willein H. A. Elink, 71, Bosboon-Toussaintstraat, Amsterdam.
1883		*Schwann, John Frederick, Oakfield, Wimbledon; and 6, Moorgate-st., E.C.
1900	d	Scott, Richard Clarkson, 21, Water-street, Liverpool.
1888		Scotter, Sir Charles, Surbiton.
1880		*Seeley, Sir Charles, Bart., Sherwood Lodge, Nottingham.
1899		Setchfield, George Beeby ( <i>Refuge Ass. Co.</i> ), Beulah Kop, 3, Clarkson-street, Sheffield.
1886	d p	Seyd, Ernest J. F., 38, Lombard-street, E.C.
1873	d	Seyd, Richard, 38, Lombard-street, E.C.
1898	c	SHAW, WILLIAM NAPIER, M.A., F.R.S., D.Sc., 10, Moreton-gardens, South Kensington, W.
1877	c d p	SHAW-LEFEVRE, THE RIGHT HON. GEORGE, M.A. (Honorary Vice-President), 18, Bryanston-square W.
1898	d	Sherwell, Arthur, Crossways House, Reigate-hill, Surrey.
1885		Sherwin, Joseph Henry, 10, Little College-street, Westminster Abbey, S. W.
1888		Shillcock, Joshua, M.A., Bank of England, West Branch, Burlington-gardens, W.
1904		Sidwell, Henry Thomas, Hatfield, Herts.
1886		Silver, Stephen William, 3, York-gate, Regent's-park, N. W.
1904		Sim, James Duncan Stuart, Ravenscroft, Nutfield, Surrey.
1892		*Sinclair, Captain John, M.P., 101, Mount-street, Berkeley-square, W.

Year of Election.		
1902		Sinclair, H. D., 19 and 20, <i>Silver-street, Wood-street, E.C.</i>
1881	d	Skrine, Francis Henry B., <i>c/o H. S. King and Co., 45, Pall Mall, S.W.</i>
1888		Slade, Alfred Thomas, <i>Wardrobe Chambers, Queen Victoria-street, E.C.</i>
1888		Slade, Francis William, 17, <i>Victoria-street, Westminster, S.W.</i>
1883		Sly, Richard Stevens, J.P., F.R.G.S., <i>Killiney, Hatherley-road, Sidcup, Kent.</i>
1878		*Smith, Charles, M.R.I.A., F.G.S., Assoc. Inst. C.E., <i>c/o Sir Henry Gilbert, Harpenden, St. Albans.</i>
1878	d	*Smith, George, LL.D., C.I.E., 10, <i>South Learmouth-gardens, Edinburgh.</i>
1889	d	Smith, George Armitage, M.A., 3, <i>Albert-terrace, Regent's-park, N.W.</i>
1904		Smith, Hastings B. Lees, M.A., <i>Ruskin College, Oxford.</i>
1877		Smith, Howard S., A.I.A., F.F.A., <i>Bank Chambers, 14, Waterloo-street, Birmingham.</i>
1888	c d	SMITH, HUBERT LLEWELLYN, C.B., M.A., B.Sc., <i>Oakfield Lodge, Ashted.</i>
1891		Smith, Right Hon. James Parker, P.C., M.P., <i>Jordanhill, Partick, N.B.</i>
1901		Smith, Robert John, C.A., 59, <i>St. Vincent-street, Glasgow.</i>
1890		Smith, William Alexander, J.P., <i>Arpafeelie, Moorebank, N.S.W.</i>
1894		*Smith, The Hon. William Frederick Danvers, M.P., 3, <i>Grosvenor-place, S.W.</i>
1894		Smithers, Frederick Oldershaw, 171, <i>Adelaide-road, Hampstead, N.W.</i>
1900		*Somerville, William, D.Sc., M.A., <i>Board of Agriculture and Fisheries, 4, Whitehall-place, S.W.</i>
1899		Sorley, James, F.I.A., F.F.A., F.R.S.E., 32, <i>Onslow-square, S.W.</i>
1904		Souter, John, <i>c/o Mines Depart., P.O. Box 1132, Johannesburg.</i>
1897		Southgate, Henry William, 10, <i>Gippeswyk-avenue, Ipswich.</i>
1895		Soward, Alfred Walter, 28, <i>Therapia-road, Honor Oak, S.E.</i>
1855	d	Sowray, John Russell, <i>Golfers' Club, Whitehall-court, S.W.</i>
1904		Sowrey, John William, <i>Surveyor of Taxes, Telegraph Street, E.C.</i>
1896		Sparrow, Frederick Syer, <i>c/o J. Wonfor, 22, Yonge-pk., Seven Sisters-rd.</i>



Year of Election.		
1889		Speirs, Edwin Robert ( <i>General Life Ass. Co.</i> ), 1, <i>Waterloo-place, S. W.</i>
1904		Spencer, Frederick Herbert, LL.B., 17, <i>Tiverton-mansions, Gray's Inn-road, W. C.</i>
1867		*Spencer, Robert James,
1892		Spender, John Alfred, M.A., 45, <i>Sloane-street, S. W.</i>
1897	d	Spensley, J. Calvert, 3, <i>Provost-road, S. Hampstead, N. W.</i>
1883		Spicer, Albert, 50, <i>Upper Thames-street, E. C.</i>
1898		Spicer, Edward Samuel, 73, <i>Philbeach-gardens, S. W.</i>
1856	d	*Sprague, Thomas Bond, M.A., LL.D., F.I.A., 29, <i>Buckingham-terrace, Edinburgh.</i>
1882		Stack, Thomas Neville, 7, <i>Union-court, E. C.</i>
1901		Stallard, Charles Frampton, <i>P.O. Box 5156, Johannesburg.</i>
1889	d	Stanton, Arthur G., 13, <i>Rood-lane, E. C.</i>
1902		*Steel-Maitland, Arthur Herbert Drummond Ramsay, 72, <i>Cadogan-square, S. W.</i>
1899		Stenberg, Ernst Gottfried, <i>Registrar-General's Office, Perth, W. A.</i>
1882		*Stern, Sir Edward D., 4, <i>Carlton House-terrace, S. W.</i>
1885	d	Stevens, Marshall, 18, <i>Exchange-street, Manchester</i>
1903	d	Stevens, William James, 148, <i>Devonshire-road, Forest Hill, S. E.</i>
1902	d	Stone, George F., <i>Secretary, Board of Trade, Chicago.</i>
1904		Stoppelaar, Gerard Nicolaas de, 48, <i>Chaussée de Charleroi, Brussels.</i>
1902		Stott, Walter Grason, <i>Waverley Hotel, Southampton-row, W. C.</i>
1889		Stow, Harry Vane, 24, <i>Holborn, E. C.</i>
1872	d	Strachey, General Sir Richard, R.E., G.C.S.I., F.R.S., 69, <i>Lancaster-gate, W.</i>
1883	d	*Strathcona and Mount Royal, The Right Hon. Lord, G.C.M.G. ( <i>High Commissioner for Canada</i> ), 17, <i>Victoria-street, S. W.</i>
1880		Strutt, Hon. Frederick, <i>Milford House, near Derby.</i>
1884		*Sugden, Richard, <i>The Farre Close, Brighouse, Yorkshire.</i>

Year of Election.		
1895		Sutherland, J. Francis, M.D., 19, <i>Mayfield-road, Edinburgh.</i>
1902		Sutton, Martin John, J.P., <i>Henley-park, Henley-on-Thames.</i>
1900		Swetenham, Charles C., <i>c/o Grindlay Groom &amp; Co., Bombay, India.</i>
1881		Sykes, George Samuel, 1, <i>Grant's-lane, Calcutta, India.</i>
1900	<i>d p</i>	Sykes, John Frederick Joseph, M.D., D.Sc., 40, <i>Camden-square, N.W.</i>
1904		Tatham, Basil St. John, <i>P.O. Box 1558, Johannesburg.</i>
1889	<i>d</i>	Tattersall, William, <i>Melbrook, Bowdon, Cheshire.</i>
1889		Taylor, Stephen Seaward (Alderman), <i>Fairholme, Mt. Ephraim-rd., Streatham, S.W.</i>
1901		Taylor, Lachlan,
1887	<i>d</i>	Taylor, R. Whately Cooke, 39, <i>Victoria-street, S.W.</i>
1888		*Taylor, Theodore Cooke, M.P., J.P., <i>Sunny Bank, Batley, Yorkshire.</i>
1898		Teasdale, William Alfred, 21, <i>Boston-street, Hulme, Manchester.</i>
1893		Teece, Richard, F.I.A., F.F.A., 87, <i>Pitt-street, Sydney, N.S.W.</i>
1888	<i>d</i>	Temperley, William Angus, junr., 2, <i>St. Nicholas-buildings, Newcastle-on-Tyne.</i>
1888		Theobald, John Wilson, 3a, <i>Coleman-street, E.C.</i>
1889		Thodey, William Henry, 479, <i>Collins-street, Melbourne, Victoria.</i>
1888	<i>c d p</i>	THOMAS, DAVID ALFRED, M.A., M.P., <i>Llanwern, near Newport, Mon.</i>
1887		Thomas, John Collette, <i>Trewince, Portscatho, Cornwall.</i>
1896	<i>d</i>	Thomas, John Tubb. L.R.C.P. & S. (Edin ), D.P.H., <i>Pevensey House, Trowbridge, Wilts.</i>
1864		*Thompson, Henry Yates, 19, <i>Portman-square, W.</i>

Year of Election.		
1901	<i>d p</i>	Thompson, Robert John, <i>Board of Agriculture and Fisheries, 4, Whitehall-place, S.W.</i>
1895		Thomson, David Couper, J.P., <i>Dundee Courier Office, Dundee.</i>
1882		Tinker, James, <i>Hordle House, Brockenhurst, R.S.O., Hants.</i>
1889		Touch, George Alexander, <i>26, Collingham-gardens, South Kensington, S.W.</i>
1899	<i>p</i>	Tozer, William Henry, <i>28, Abingdon-street, Westminster, S.W.</i>
1868		*Treatt, Frank Burford, <i>Police Magistrate, Cobar, New South Wales.</i>
1868		Tritton, Joseph Herbert, <i>54, Lombard-street, E.C.</i>
1903	<i>d</i>	Trivett, John Burt, <i>Friendly Societies' Dept., Sydney, N.S.W.</i>
1903		Tryon, Captain George Clement, <i>45, Eaton-place, S.W.</i>
1890		*Turner, Rev. Harward, M.D. (Paris), B.Sc., F.R.M.S.,
1885		Turner, William (c/o The Librarian), <i>Free Public Library, Trinity-street, Cardiff.</i>
1892		Tyler, Edgar Alfred, <i>9, Old Jewry Chambers, E.C.</i>
1903		Unstead, John Frederick, B.A., <i>62, Stockwell Park-road, S.W.</i>
1877	<i>c d p</i>	*Umlin, Richard Denny, <i>22, Stafford-terrace, Phillimore-gardens, W.</i>

Year of Election.		
1903		*Vaizey, Ker George Russell, 10, <i>Lime-street, E.C.</i>
1888		Van Raalte, Marcus, 22, <i>Austin Friars, E.C.</i>
1903		Varley, Jesse, C.A., A.C.I.S., <i>Longleat, Paget-road, Wolverhampton.</i>
1889		*Venning, Charles Harrison, 25, <i>Lawrence-lane, Cheapside, E.C.</i>
1888		Verdin, William Henry, J.P., <i>Winsford, Cheshire.</i>
1894		Verney, Frederick William, 12, <i>Connaught-place, Marble Arch, W.</i>
1886	c	VERULAM, THE RIGHT HON. THE EARL OF, <i>Gorhambury, St. Albans.</i>
1876		Vigers, Robert, 4, <i>Frederick's-place, Old Jewry, E.C.</i>
1885		Vincent, Frederick James, A.I.A. ( <i>London, Glasgow, and Edinburgh Assurance Co.</i> ), 26 & 27, <i>Farringdon-street, E.C.</i>
1877	d	Vine, Sir John Richard Somers, C.M.G., <i>P.O. Box 654, Cape Town, South Africa.</i>
1904		Vinter, James Odell, J.P., <i>Southfield, Trumpington, Cambs.</i>
1902		Wacha, Dinsha Edulji, 84, <i>Hornby-road, Fort, Bombay.</i>
1904		Wagner, H. R., 120, <i>Bishopsgate-street Within, E.C.</i>
1902		Wahrmaun, Ernest, <i>Gisellaplatz, 5, Buda Pesth.</i>
1900		Walford, Adolphus Augustus Beddall ( <i>Frank Brown &amp; Co.</i> ), <i>Finkle Chambers, Stockton-on-Tees.</i>
1890	d	Walford, Ernest Leopold, 11c, <i>Hyde Park-mansions, Marylebone-rd., N.W.</i>
1900		Wall, Arthur Eccles, 50, <i>Longland-road, Liscard, Cheshire.</i>
1903	d	Wall, Edgar George, 29, <i>Palliser-road, West Kensington, W.</i>

Year of Election.		
1904	d	Wall, Walter William, 26, <i>Bradgate-road, Catford, S.E.</i>
1868		Wallis, Charles James, <i>Hoe, Gomshall, Guildford.</i>
1880	d	Wallis, E. White, <i>Upper Froggnal Lodge, Hampstead, N.W.</i>
1904		*Walsh, Correa Moylan, <i>Bellport, Long Island, New York, U.S.A.</i>
1900	d	Wamsley, Arthur Wilson, <i>Royal Exchange Ass. Co., Royal Exchange, E.C.</i>
1899		Ward, Joseph Frederick, 8, <i>Main-street, Port Elizabeth.</i>
1893		Ward, William Cullen, F.S.I.A., 113, <i>Pitt-street, Sydney, N.S.W.</i>
1888		Warren, Reginald Augustus, J.P., <i>Preston-place, near Worthing.</i>
1865		Waterhouse, Edwin, B.A., A.I.A., F.C.A., 3, <i>Frederick-place, Old Jewry, E.C.</i>
1886	p	Waters, Alfred Charles, <i>General Register Office, Somerset House, W.C.</i>
1892		Wates, Charles Marshall, 47, <i>Westbere-road, West Hampstead, N.W.</i>
1904		Watkins, John Milton, " <i>Statist</i> " <i>Office, 51, Cannon-street, E.C.</i>
1902	d	Watson, Alfred William, F.I.A., " <i>Wenhaston</i> ," <i>Ebers-rd., Mapperley-pk., Notts.</i>
1903		Watson, Ralph Cook, 31, <i>Sanderson-road, Newcastle-on-Tyne.</i>
1885	d	*Watt, William, 17, <i>Queen's-road, Aberdeen.</i>
1888		Webb, Henry Barlow, <i>Holmdale, Dorking.</i>
1904	d	Webb, Montagu de Pomeroy, <i>Karachi, India.</i>
1893	d	Weedon, Thornhill, <i>Govt. Statistician, Bryn-Mawr, Brisbane.</i>
1873	c	*Welby, The Right Hon. Lord, G.C.B., 11, <i>Stratton-street, Piccadilly, W.</i>
1874		Welch, Charles, F.S.A., <i>Guildhall, E.C. (Representing the Library Committee of the Corporation of the City of London.)</i>
1900		Weldon, Francis Seymour, <i>Sarandi, East Molesey.</i>
1889		*Wells-Smith, Henry, A.C.A., " <i>Hillcrest</i> ," <i>Blyth-grove, Worksop, Notts.</i>
1855	c d p	WELTON, THOMAS ABERCROMBIE, F.C.A., 22, <i>Pulace-road, Streatham-hill, S.W.</i>
1902		Westall, George, 87, <i>Chancery-lane, W.C.</i>

Year of Election.		
1879		*Westlake, John, K.C., LL.D., <i>The River House, 3, Chelsea Embankment.</i>
1901		Weston, Sydney Frank, <i>19, Epperstone-rd., W. Bridgford, Nottingham.</i>
1882		*Whadcoat, John Henry, F.C.A., <i>Rockcliffe, Kirkcudbrightshire.</i>
1878		Wharton, James, <i>Edgehill, Netherhall-gds., FitzJohn's-av., N.W.</i>
1887		Whinney, Frederick, <i>8, Old Jewry, E.C.</i>
1859		Whitbread, Samuel, <i>Southill-park, Biggleswade, Beds.</i>
1887		*White, The Rev. George Cecil, M.A., <i>Nursling Rectory, Southampton.</i>
1863		White, Leedham, <i>16, Wetherby-gardens, South Kensington, S.W.</i>
1888	d	Whitehead, Sir James, Bart., J.P., D.L., <i>Wilmington Manor, near Dartford.</i>
1895	d	Whitehead, The Hon. Thomas Henderson, M.L.C., <i>Chartered Bank of India, &amp;c., Hong Kong.</i>
1892	c d	WHITELEGGE, B. ARTHUR, C.B., M.D., <i>3, Edwardes-place, Kensington, W.</i>
1884	d	Whiteley, William, <i>31, Porchester-terrace, Hyde-park, W.</i>
1895		Whittuck, Edward Arthur, M.A., B.C.L., <i>Claverton Manor, Bath.</i>
1899		Wiener, Isidore, <i>Colecroft, Kenley, Surrey.</i>
1898		Wigham, Matthew Thomas, A.S.A.A., <i>826, Salisbury House, London Wall, E.C.</i>
1884		Wightman, Charles, <i>1, Fenchurch-avenue, E.C.</i>
1895		Wilcken, Gregory, <i>7, Wetherby-gardens, South Kensington, S.W.</i>
1904		Wilkins, Henry H. J., <i>St. Tydfil Chambers, Queen-street, Cardiff.</i>
1860		Willans, John Wrigley, <i>National Liberal Club, Whitehall-place, S.W.</i>
1902		Willby, Percy Luck <i>810—11, Salisbury House, London-wall, E.C.</i>
1901	d	Willcox, Walter F., Ph.D., <i>Cornell University, Ithaca, New York, U.S.A.</i>
1896		*Williams, Major Charles Woolmer, <i>245, Shaftesbury-avenue, New Oxford-st., W.C.</i>
1897		*Williams, Ernest E., <i>Egmont Lodge, Church-row, Old Fulham, S.W.</i>
1904		Williams, Frederick Alfred, A.I.A., <i>Hurstpierpoint, Hornchurch, Essex.</i>
1864		Williams, Frederick Bessant, F.S.A. (Scot.), <i>19, Haymarket, S.W.</i>

Year of Election.		
1895		Williams, Harry Mallam, F.S.A. (Scot.), <i>Tilehurst, Priory-park, Kew.</i>
1888		*Williams, Robert, M.P., <i>20, Birchin-lane, E.C.</i>
1895		*Willis, J. G., B.A., <i>Board of Trade, Whitehall-gardens, S. W.</i>
1898		Wilson, Alexander Johnstone, <i>Annandale, Atkin's-road, Clapham-park, S. W.</i>
1901		Wilson, George Thomson ( <i>Equitable Life Ass. Soc. of U.S.</i> ), 120, Broadway, New York.
1891		Wilson, Henry Joseph, M.P., <i>Osgathorpe Hills, Sheffield.</i>
1898		Wilson, Henry Wrigley, <i>144, Elgin-avenue, W.</i>
1884		Wilson, Hon. James, C.S.I., <i>Secretary to Government, Calcutta, India.</i>
1900		Wines, Frederick H., M.D., <i>Census Office, Washington, D.C., U.S.A.</i>
1900	d	Wolfe, S. Herbert, <i>35, Nassau-street, New York City, U.S.A.</i>
1900		Wolfenden, Henry, <i>1, Palace-court, Hyde-park, W.</i>
1902		Wolfner, Dr. Paul, <i>Andrássy-ut 10. sz., Buda Pesth.</i>
1902	d	Wood, Alfred John, I.S.O., <i>Statistical Office, Custom House, E.C.</i>
1897	d p	Wood, George Henry, <i>14, McLeod-road, Abbey Wood, Kent.</i>
1897		Woodd, Basil Aubrey Hollond. <i>Conyngham Hall, Knaresborough, Yorks.</i>
1887	d	Woodhouse, Coventry Archer, <i>30, Mincing-lane, E.C.</i>
1902		Woodhouse, Lister, A.C.A., <i>Westminster City Hall, Charing Cross-rd., W.C.</i>
1890		*Woollcombe, Robert Lloyd, LL.D., &c., <i>14, Waterloo-road, Dublin.</i>
1903		Woolley, Ernest, <i>7, Finch-lane, Cornhill, E.C.</i>
1895		Worsfold, Edward Mowll, <i>Market Square, Dover.</i>
1878		Worsfold, Rev. John Napper, M.A., <i>Haddlesey Rectory, near Selby, Yorks.</i>
1887		Worthington, A. W., B.A., <i>Old Swinford, Stourbridge.</i>

Year of Election.		
1895		Yanagisawa, Count Yasutoshi, 1, <i>Shiba Yamachi</i> , 8, <i>Chôme</i> , <i>Tokio, Japan</i> .
1886	c d p	Yerburgh, Robert Armstrong, M.P., 25, <i>Kensington Gore</i> , <i>S.W.</i>
1900		Yerbury, John Edwin, <i>The Settlement, Tavistock-place, W.C.</i>
1888		*Yglesias, Miguel, 2, <i>Tokenhouse-buildings, E.C.</i>
1902		Yorke, Captain James Austin, 213, <i>The Grove, Hammersmith, W.</i>
1877		*Youll, John Gibson, <i>Jesmond-road, Newcastle-on-Tyne</i> .
1898		Young, Sydney, <i>The Corn Exchange, Mark-lane, E.C.</i>
1895	c d p	Yule, George Udny, <i>City &amp; Guilds Institute, Exhibition-road, S.W.;</i> <i>&amp; Pine Cone, Woodham-rd., nr. Addlestone.</i>
1901	d	Zimmerman, Lawrence Wolff, 5, <i>Edensor-place, Dickenson-road, Rusholme,</i> <i>Manchester.</i>

\* \* The Honorary Secretaries request that any inaccuracy in the foregoing list, and all changes of address, may be notified to the ASSISTANT SECRETARY.



## HONORARY FELLOWS.

HIS MOST GRACIOUS MAJESTY THE KING,  
*Patron.*

HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G.,  
*Honorary President.*

## Argentine Republic.

Year of  
Election  
1890

- d* FRANCISCO LATZINA, **Calle Maipu, 982, Buenos Ayres.**  
Director General of Statistics; Doctor *honoris causa* of the Faculty of Physical and Mathematical Sciences of the University of Cordoba; Knight of the Italian Order of S.S. Maurice and Lazare; Officer of the Academy of France; Member of the National Academy of Sciences, of the International Statistical Institute, of the Geographical and Statistical Societies of Paris, of the Society of Commercial Geography of Paris, and Corresponding Member of the National Historical Academy of Venezuela.

## Austria-Hungary.

- 1890 *d* KARL THEODOR VON INAMA-STERNEGG, **Vienna.**  
Doctor of Political Economy; Member of the Austrian House of Lords; President of the Imperial and Royal Central Statistical Commission; Professor at the University of Vienna; President of the International Statistical Institute.
- 1893 *d* FRANZ RITTER VON JURASCHEK, **Kärnthnerstrasse, 53, Vienna.**  
Doctor *Juris et Philosophiæ*; "K.K. Regierungsrath;" Member and Secretary of the Imperial and Royal Central Statistical Commission; Professor at the University of Vienna; Professor of Public Law and of Statistics at the Military Academies, Vienna; Knight of the Austrian Order of the Iron Crown (3rd Class); Officer of the Order of the Crown of Italy; Member of the Permanent Commission for Commercial Values; of the International Statistical Institute; and of the Royal Economic Society.
- 1893 *d p* JOSEPH KÖRÖSI, **Budapest.**  
Director of the Municipal Statistical Bureau of Budapest; Docent at the University of Budapest; President of the Municipal Statistical Committee; Knight of Several Orders; Member of the Statistical Commissions of Hungary, Belgium, and Nijni-Novgorod; Honorary Member of the American Statistical Associations; Member of the Hungarian Academy of Science, of the International Statistical Institute, of the Statistical Societies of Manchester and Paris, of the Royal Economic Society, and of several other learned Societies.

Year of  
Election.**Austria-Hungary—Contd.**

- 1904 *d* **JULES DE VARGHA, Budapest.**  
Director of the Central Statistical Bureau of Hungary;  
President of the Commission for the preparation of the  
annual administration report on Hungary; Member of  
the International Statistical Institute.

**Belgium.**

- 1904 *d* **EMILE WAXWEILER, Parc Leopold, Brussels.**  
Honorary Engineer of Roads and Bridges; Director of the  
Sociological Institute, Brussels; Professor of Economics  
and Finance at the University of Brussels; Superintendent  
of Statistical Section of Labour Department; Member of  
the International Statistical Institute.

**China.**

- 1890 *d* **SIR ROBERT HART, Baronet, G.C.M.G., LL.D., Peking.**  
Inspector-General of Imperial Maritime Customs, China.

**Denmark.**

- 1878 *d* **VIGAND ANDREAS FALBE-HANSEN, Copenhagen.**  
Director of the Statistical Bureau of the State; late Professor  
of Political Economy at the University of Copenhagen.
- 1900 *d p* **MARCUS RUBIN, Vendersgade 23a, Copenhagen.**  
Knight of the Order of the "Danebrog"; Director-General  
of Customs and Taxation; late Director of the Statistical  
Bureau of the State; President of the Danish Society of  
Political Economy and of the Board of the Danish Society  
of History; Member of the International Statistical  
Institute.

**France.**

- 1880 *d p* **JACQUES BERTILLON, M.D., 1, Avenue Victoria, Paris.**  
Chief of the Statistical Department of the City of Paris;  
Member of the Superior Council of Statistics; of the  
Consultative Committee of Public Hygiene of France;  
Past President of the Statistical Society of Paris; and  
Member of the International Statistical Institute, &c.
- 1879 *d* **ARTHUR CHERVIN, M.D., 82, Avenue Victor Hugo, Paris.**  
Doctor of Medicine and Surgery; Director of the Paris  
Institute for Stammerers; Vice-President of the Sta-  
tistical Society of Paris; Member of the Superior  
Institute, &c.

Year of  
Election.  
1897

**France—Contd.**

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| 1897 | <i>d</i>   | <p><b>JEAN JACQUES ÉMILE CHEYSSON, 4, Rue Adolphe Yvon, Paris.</b><br/>Inspector-General of Bridges and Highways; Member of the International Statistical Institute; Past President of the Statistical Society of Paris; late Director of the Creusot Iron Works, of Machinery at the Paris Exhibition of 1867, and of Graphic Statistics for the Ministry of Public Works.</p>  |
| 1890 | <i>d p</i> | <p><b>ALFRED DE FOVILLE, 3, Rue du Regard, Paris.</b><br/>Late Master of the Mint; Councillor of the Court of Accounts; Officer of the Legion of Honour; Member of the Institute of France; Past President of the Statistical Society of Paris; Member of the International Statistical Institute and of the Superior Council of Statistics.</p>   |
| 1870 | <i>d</i>   | <p><b>CLÉMENT JUGLAR, 167, Rue St. Jacques, Paris.</b><br/>Member of the Institute of France; Past President of the Statistical Society of Paris; Vice-President of the Society of Political Economy of Paris; Member of the International Statistical Institute.</p>  |
| 1860 | <i>d p</i> | <p><b>PIERRE ÉMILE LEVASSEUR, Collège de France, Paris.</b><br/>Member of the Institute of France; Professor at the College of France and at the Conservatoire of Arts and Trades; President of the Statistical Commission for Primary Instruction; Past President of the Statistical Society of Paris; Vice-President of the International Statistical Institute, of the Superior Council of Statistics, and of the Society of Political Economy, &amp;c.</p> |
| 1887 |            | <p><b>DANIEL WILSON, 2, Avenue d'Jéna, Paris.</b><br/>Ex-Under-Secretary of State; Past President of the Statistical Society of Paris.</p>   |
| 1876 | <i>d</i>   | <p><b>THE PRESIDENT (for the time being) OF THE STATISTICAL SOCIETY OF PARIS, 28, Rue Danton, Paris.</b></p>   |

**Germany.**

- |      |          |   |
|------|----------|---|
| 1890 | <i>d</i> | <p><b>KARL JULIUS EMIL BLENCK, Lindenstrasse, 28, Berlin, S.W.</b><br/>"Geheimer Ober-Regierungsrath;" Director of the Royal Statistical Bureau of Prussia, also Member of the Prussian Central Statistical Commission and of the Central Board of Control of the Survey of Prussia; Member of the International Statistical Institute; Honorary Member or Member of several learned Societies.</p> |
| 1896 | <i>d</i> | <p><b>CARL VICTOR BÖHMERT, Hospitalstrasse, 4, Dresden.</b><br/>"Geheimer Regierungsrath;" Doctor <i>Juris</i>; Late Director of the Statistical Bureau of Saxony; Professor of Political Economy and Statistics in the Polytechnical High School of Dresden; Member of the International Statistical Institute.</p>  |

Year of  
Election.**Germany—Contd.**

- 1904 *d* **DR. WILHELM LEXIS, Göttingen.**  
Professor of Economics and Statistics at the University of Göttingen; Vice-President of the International Statistical Institute.
- 1877 *d* **GEORG VON MAYR, Georgenstrasse, 38, Munich.**  
Ex-Under Secretary of State in the Imperial Ministry for Alsace-Lorraine; formerly Director of the Royal Statistical Bureau of Bavaria; Honorary Member of the International Statistical Institute; Ordinary Professor of Statistics, Finances, and Political Economy at the University of Munich; Associate of the Statistical Society of Paris.
- 1897 **ADOLPH WAGNER, Ph.D., 51, Lessingstrasse, Berlin, N.W.**  
Professor of Political Economy at the University of Berlin; Member of the Statistical Bureau of Prussia, and of the International Statistical Institute.
- 1876 *d* **THE PRESIDENT (for the time being) OF THE GEOGRAPHICAL AND STATISTICAL SOCIETY OF FRANKFORT, Stadtbibliothek, Frankfurt.**

**Italy.**

- 1874 *d* **LUIGI BODIO, 153, Via Torino, Rome.**  
Senator; Doctor of Laws; Professor of Industrial Legislation and of Statistics at the Engineering College, Rome; Councillor of State; Commissioner-General of Emigration; Secretary of the International Statistical Institute; Grand Officer of the Order of SS. Maurice and Lazare; Knight of the Order of Civil Merit of Savoy; Correspondent of the Institute of France (Academy of Moral and Political Sciences).
- 1890 *d* **CARLO FRANCESCO FERRARIS, Via 20 settembre, 7, Padua.**  
Professor of Administrative Science and Law, and of Statistics at the Royal University of Padua; Member of the Superior Council of Statistics and of the Superior Council of Public Education of Italy; Member of the Academy "dei Lincei," of the Royal Institute of Science at Venice, of the International Statistical Institute, and Honorary Member of the Swiss Statistical Society; Ex-Member of the Italian Parliament.
- 1904 **FEDELE LAMPERTICO, Vicenza.**  
Senator; Member of the Academy "dei Lincei."; President of Venice Institute of Science and Literature; Member of the Judicial Statistical Committee for Italy; Honorary Member of International Statistical Institute.

**Mexico.**

- 1895 *d* **DON MANUEL FERNANDEZ LEAL, Mexico.**  
Director of the Mint; Late Secretary of State, Department of "Fomento," Colonization and Industry.

Year of  
Election.**Netherlands.**

- 1896 *d* **NICOLAAS GERARD PIERSON, The Hague.**  
Minister of Finance; Late President of the Netherlands Bank; Late Professor of Political Economy at the University of Amsterdam; Member of the International Statistical Institute.
- 1904 *d* **C. A. VERRIJN STUART, The Hague.**  
Director of the Central Statistical Bureau of the Netherlands; Member of the Central Commission of Statistics; Corresponding Member of Statistical Society of Paris; Member of International Statistical Institute.

**Roumania.**

- 1896 *d* **GRÉGOIRE P. OLANESCO, Rue Grivitzza 36, Bucharest.**  
Late Director-General of Customs; Late General Secretary, Ministry of Finance; Officer of the Legion of Honor; Member of the International Statistical Institute.

**Russia.**

- 1873 *d* **HIS EXCELLENCY PIERRE SEMENOV, St. Petersburg.**  
Senator; Privy Councillor to His Imperial Majesty; President of the Imperial Statistical Council; President of the Imperial Geographical Society; Honorary Member of the Academy of Sciences in St. Petersburg; Associate of the Statistical Society of Paris.
- 1890 *d* **HIS EXCELLENCY NICOLAS TROÏNITSKY, Mohovaia 6, St. Petersburg.**  
Former Governor; Senator; Privy Councillor; late Director of the Central Statistical Committee of the Ministry of the Interior; President of the Statistical Council, Life Member of the Imperial Geographical Society of Russia, Vice-President of the International Statistical Institute, and Member of the Statistical Society of Paris.

**Spain.**

- 1845 **HIS EXCELLENCY SENOR DON JOSÉ MAGAZ Y JAYME, Calle de Leon, 13, Madrid.**  
Advocate, Gentleman of His Majesty's Chamber, and Member of the Council of State; Ex-Deputy of the Cortes; Ex-Senator; Ex-Director-General of Treasury; Ex-Under-Secretary of the Ministry of Finance; Grand Cross of the Order of Isabella Catolica; Commander of the Order of Carlos 3°.

**Sweden and Norway.**Year of  
Election.

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|------|----------|--|
| 1858 | <i>d</i> | <p><b>THORKIL HALVORSEN ASCHEHOUG, 41, Josephinegade Christiania.</b></p> <p>Doctor of Laws; Professor of Political Economy at the University of Christiania; Assessor Extraordinary of the Supreme Court of Norway; Commander of the First Class of the Norwegian Order of St. Olave, of the Swedish Order of the North Star; and of the Danish Order of the "Dannebrog;" Corresponding Member of the Institute of France; Member of the Institute of International Law, of the International Statistical Institute, and of the Academies of Christiania, Stockholm, Trondhjem and Upsala, also of the Royal Historical Society of Denmark.</p> |
| 1874 | <i>d</i> | <p><b>ANDERS NICOLAI KIÆR, Christiania.</b></p> <p>Director of the Central Statistical Bureau of Norway; Associate of the Statistical Society of Paris; Member of the International Statistical Institute.</p>   |
| 1890 | <i>d</i> | <p><b>ELIS SIDENBLADH., Ph.D., Stockholm.</b></p> <p>Late Director in Chief of the Central Statistical Bureau of Sweden; Late President of the Royal Statistical Commission; Commander, Officer, and Knight of several Swedish and Foreign Orders; Member of the Royal Academies of Sciences and of Agriculture, at Stockholm, of the International Statistical Institute, and Honorary and Corresponding Member of several foreign learned Societies.</p>   |

**Switzerland.**

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| 1890 | <i>d</i> | <p><b>LOUIS GUILLAUME, Bern.</b></p> <p>Doctor of Medicine; Director of the Federal Statistical Bureau; Secretary of the International Penitentiary Commission; Member of the International Statistical Institute.</p> |
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**United States.**

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| 1873 |          | <p><b>THE HON. WILLIAM BARNES, Thurlow-terrace, Albany, N.Y.</b></p> <p>Lawyer; Ex-Superintendent of the Insurance Department, State of New York.</p>  |
| 1881 | <i>d</i> | <p><b>JOHN SHAW BILLINGS, New York Public Library, New York City.</b></p> <p>M.A., M.D., LL.D., Edinburgh and Harvard; D.C.L., Oxon; Surgeon, U.S. Army; Member of the National Academy of Sciences, of the International Statistical Institute, &amp;c.</p> |

Year of  
Election.  
1896

**United States—Contd.**

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| 1896 | d | <p><b>WORTHINGTON CHAUNCEY FORD, 3430, Tolsom Place, Washington, D.C.</b><br/>         Late Chief of the Bureau of Statistics, Treasury Department;<br/>         Chief of the Bureau of Statistics, Department of State;<br/>         Member of the International Statistical Institute.</p>   |
| 1870 | d | <p><b>THE HON. JOHN ELIOT SANFORD, Taunton, Mass.</b><br/>         Lawyer; Ex-Speaker of the House of Representatives; Ex-Insurance Commissioner; Ex-Chairman of the Board of Harbour and Land Commissioners; Chairman of the Board of Railroad Commissioners.</p>   |
| 1893 | d | <p><b>THE HON. CARROLL DAVIDSON WRIGHT, M.A., LL.D., Washington.</b><br/>         Commissioner of the U.S. Department of Labour; late Chief of the Massachusetts Bureau of Statistics of Labour; President of the Association for the promotion of Profit Sharing; late President and now Vice-President of the American Social Science Association; President of the American Statistical Association; Member of the American Economic Association, of the Royal Economic Society, and of the International Statistical Institute; Hon. Member of the Russian Imperial Academy of Sciences; Corresponding Member of the Institute of France; and Member of several other learned Societies.</p> |
| 1877 | d | <p><b>EDWARD YOUNG, M.A., Ph.D., 207, Maryland Avenue, N.E., Washington, U.S.A.</b><br/>         Late Consul of the United States; formerly Chief of the Bureau of Statistics, United States of America; Member of the Geographical Society of Paris.</p>  |

**Dominion of Canada.**

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| 1894 | d | <p><b>GEORGE JOHNSON, Ottawa.</b><br/>         Statistician, Department of Agriculture, Ottawa, Canada.</p> |
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**New South Wales.**

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| 1893 | d p | <p><b>TIMOTHY AUGUSTINE COGHLAN, Sydney.</b><br/>         Government Statistician of New South Wales; Member of the Public Science Board; formerly Registrar of Friendly Societies and Trade Unions; and Assistant Engineer for Harbours and Rivers.</p> |
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**New Zealand.**

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| 1876 | d | <p><b>SIR JAMES HECTOR, K.C.M.G., M.D., F.R.S.S. L. and E., F.G.S., &amp;c., Petone.</b><br/>         Director of the Geological Survey, of the Meteorological Department, and of the New Zealand Institute, &amp;c.</p> |
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Year of  
Election.**Tasmania.**

- 1894 *d* **ROBERT MACKENZIE JOHNSTON, I.S.O., Hobart.**  
Registrar-General and Government Statistician; Fellow and Member of Council of the Royal Society of Tasmania; Member of Council and of Senate of the University of Tasmania; Fellow and Past President of Section F (*Economics and Statistics*) of the Australasian Association for the Advancement of Science; Fellow of the Royal Geographical Society of Australia; Honorary Foreign Corresponding Member of the Geological Society of Edinburgh; Fellow of the Linnean Society of London.
- 1876 *d p* **EDWIN CRADOCK NOWELL, J.P., Hobart.**  
Clerk of Executive and Legislative Councils of Tasmania; late Government Statistician; Clerk to the Federal Council of Australasia in its four Sessions.

**Victoria.**

- 1858 *d* **WILLIAM HENRY ARCHER, K.C.P., K.S.G., F.I.A., F.L.S., &c., 21, Hornby Street, Windsor, Melbourne.**  
Barrister-at-Law.

**Great Britain and Ireland.**

- 1876 *d* **THE PRESIDENT (for the time being) OF THE MANCHESTER STATISTICAL SOCIETY, 32, York Street, Manchester.**
- 1876 *d* **THE PRESIDENT (for the time being) OF THE STATISTICAL AND SOCIAL INQUIRY SOCIETY OF IRELAND, 35, Molesworth Street, Dublin.**

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\* \* \* The Honorary Secretaries request that any inaccuracies in the List of HONORARY FELLOWS, and all changes of address, may be notified to the Assistant Secretary.



# ROYAL STATISTICAL SOCIETY.

## *Copy of Charter.*

**Victoria, by the Grace of God** of the United Kingdom of Great Britain and Ireland Queen, Defender of the Faith.

**To all to whom** these Presents shall come, Greeting:—

**Whereas** Our Right trusty and entirely beloved cousin, Henry, Third Marquess of Lansdowne, Knight of the Most Noble Order of the Garter, Charles Babbage, Fellow of the Royal Society, John Elliott Drinkwater, Master of Arts, Henry Hallam, Fellow of the Royal Society, the Reverend Richard Jones, Master of Arts, and others of Our loving subjects, did, in the year One thousand eight hundred and thirty-four, establish a Society to collect, arrange, digest and publish facts, illustrating the condition and prospects of society in its material, social, and moral relations; these facts being for the most part arranged in tabular forms and in accordance with the principles of the numerical method, and the same Society is now called or known by the name of "The Statistical Society."

**And Whereas** it has been represented to Us that the same Society has, since its establishment, sedulously pursued such its proposed objects, and by its publications (including those of its transactions), and by promoting the discussion of legislative and other public measures from the statistical point of view, has greatly contributed to the progress of statistical and economical science.

**And Whereas** distinguished individuals in foreign countries, as well as many eminent British subjects, have availed themselves of the facilities offered by the same Society for communicating important information largely extending statistical knowledge; and the general interest now felt in Statistics has been greatly promoted and fostered by this Society.

**And Whereas** the same Society has, in aid of its objects, collected a large and valuable library of scientific works and charts, to which fresh accessions are constantly made; and the said Society has hitherto been supported by annual and other subscriptions and contributions to its funds, and has lately acquired leasehold premises in which the business of the said Society is carried on.

**And Whereas** in order to secure the property of the said Society, to extend its operations, and to give it its due position among the Scientific Institutions of Our kingdom, We have been besought to grant to Sir Rawson William Rawson, Knight Com-

mander of the Most Distinguished Order of St. Michael and St. George, and Companion of the Most Honourable Order of the Bath, and to those who now are Members of the said Society, or who shall from time to time be elected Fellows of the Royal Statistical Society hereby incorporated, Our Royal Charter of Incorporation for the purposes aforesaid.

1. **Now Know Ye** that We, being desirous of encouraging a design so laudable and salutary, of Our especial grace, certain knowledge and mere motion, have willed, granted, and declared and Do by these Presents, for Us, Our heirs and successors, will, grant, and declare that the said Sir Rawson William Rawson, Knight Commander of the Most Distinguished Order of St. Michael and St. George, and Companion of the Most Honourable Order of the Bath, and such other of Our loving subjects as now are Members of the said Society, or shall from time to time be elected Fellows of "The Royal Statistical Society" hereby incorporated according to such regulations or bye laws as shall be hereafter framed or enacted, and their successors, shall for ever hereafter be by virtue of these presents one body politic and corporate, by the name of "**The Royal Statistical Society,**" and for the purposes aforesaid, and by the name aforesaid, shall have perpetual succession and a common seal, with full power and authority to alter, vary, break, and renew the same at their discretion, and by the same name to sue and be sued, implead and be impleaded, answer and be answered, unto and in every Court of Us, Our heirs and successors.

2. **The** Royal Statistical Society, in this Charter hereinafter called "The Society," may, notwithstanding the statutes of mortmain, take, purchase, hold and enjoy to them and their successors a hall, or house, and any such messuages or hereditaments of any tenure as may be necessary, for carrying out the purposes of the Society, but so that the yearly value thereof to be computed at the rack rent which might be gotten for the same at the time of the purchase or other acquisition, and including the site of the said hall, or house, do not exceed in the whole the sum of Two thousand pounds.

3. **There** shall be a Council of the Society, and the said Council and General Meetings of the Fellows to be held in accordance with this Our Charter shall, subject to the provisions of this Our Charter, have entire the management and direction of the concerns of the Society.

4. **There** shall be a President, Vice-Presidents, a Treasurer or Treasurers, and a Secretary or Secretaries of the Society. The Council shall consist of the President Vice-Presidents, and not

less than twenty Councillors; and the Treasurer or Treasurers and the Secretary or Secretaries if honorary.

5. **The** several persons who were elected to be the President, Vice-Presidents, and Members of the Council of the Statistical Society at the Annual Meeting held in the month of June, One thousand eight hundred and eighty-six, shall form the first Council of the Society, and shall continue in office until the first Election of officers is made under these presents as hereinafter provided.

6. **General** Meetings of the Fellows of the Society may be held from time to time, and at least one General Meeting shall be held in each year. Every General Meeting may be adjourned, subject to the provisions of the Bye Laws. The following business may be transacted by a General Meeting, viz.:—

- (a.) The Election of the President, Vice-Presidents, Treasure or Treasurers, Secretary or Secretaries, and other Members of the Council of the Society.
- (b.) The making, repeal, or amendment of Bye Laws.
- (c.) The passing of any proper resolution respecting the affairs of the Society.

7. **Bye Laws** of the Society may be made for the following purposes, and subject to the following conditions, viz.:—

- (a.) For prescribing the qualification and condition of tenure of office of the President; the number, qualifications functions, and conditions of tenure of office of the Vice-Presidents, Treasurers, Secretaries, and Members of Council, and Officers of the Society; for making regulations with respect to General Meetings and Meetings of the Council and proceedings thereat, and for the election of any persons to be Honorary Fellows or Associates of the Society, and defining their privileges (but such persons, if elected, shall not be Members of the Corporation), and for making regulations respecting the making, repeal and amendment of Bye Laws, and generally for the government of the Society and the management of its property and affairs.
- (b.) The first Bye Laws shall be made at the first General Meeting to be held under these presents, and shall (amongst other things) prescribe the time for holding the first election of officers under these presents.

8. **The** General Meetings and adjourned General Meetings of the Society shall take place (subject to the rules or bye laws of the Society, and to any power of convening or demanding a

Special General Meeting thereby given) at such times and places as may be fixed by the Council.

9. **The** existing rules of the Statistical Society, so far as not inconsistent with these presents, shall be in force as the Bye Laws of the Society until the first Bye Laws to be made under these presents shall come into operation.

10. **Subject** to these presents and the Bye Laws of the Society for the time being, the Council shall have the sole management of the income, funds, and property of the Society, and may manage and superintend all other affairs of the Society, and appoint and dismiss at their pleasure all salaried and other officers, attendants, and servants as they may think fit, and may do all such things as shall appear to them necessary or expedient for giving effect to the objects of the Society.

11. **The** Council shall once in every year present to a General Meeting a report of the proceedings of the Society, together with a statement of the receipts and expenditure, and of the financial position of the Society, and every Fellow of the Society may, at reasonable times to be fixed by the Council, examine the accounts of the Society.

12. **The** Council may, with the approval of a General Meeting, from time to time appoint fit persons to be Trustees of any part of the real or personal property of the Society, and may make or direct any transfer of such property so placed in trust necessary for the purposes of the trust, or may, at their discretion, take in the corporate name of the Society conveyances or transfers of any property capable of being held in that name. Provided that no sale, mortgage, incumbrance, or other disposition of any hereditaments belonging to the Society shall be made unless with the approval of a General Meeting.

13. **No** Rule, Bye Law, Resolution, or other proceeding shall be made or had by the Society, or any meeting thereof, or by the Council, contrary to the general scope or true intent and meaning of this Our Charter, or the laws or statutes of Our Realm, and anything done contrary to this present clause shall be void.

**In witness** whereof We have caused these Our Letters to be made Patent.

**Witness** Ourself, at Westminster, the thirty-first day of January, in the fiftieth year of Our Reign.

**By Warrant under the Queen's Sign Manual,**

(L. S.)

MUIR MACKENZIE.

# ROYAL STATISTICAL SOCIETY.

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## BYE-LAWS OF THE ROYAL STATISTICAL SOCIETY.

### *Objects of the Society.*

1. The objects of the Royal Statistical Society are to collect, arrange, digest and publish facts, illustrating the condition and prospects of society in its material, social and moral relations; these facts being for the most part arranged in tabular forms and in accordance with the principles of the numerical method.

The Society collects new materials, condenses, arranges, and publishes those already existing, whether unpublished or published in diffuse and expensive forms in the English or in any foreign language, and promotes the discussion of legislative and other public measures from the statistical point of view. These discussions form portions of the published Transactions of the Society.

### *Constitution of the Society.*

2. The Society consists of Fellows and Honorary Fellows, elected in the manner hereinafter described.

### *Number of Fellows and Honorary Fellows.*

3. The number of Fellows is unlimited. Foreigners or British subjects of distinction residing out of the United Kingdom may be admitted as Honorary Fellows, of whom the number shall not be more than seventy at any one time.

### *Proposal of Fellows.*

4. Every Candidate for admission as a Fellow of the Society shall be proposed by two or more Fellows, who shall certify from their personal knowledge of him or of his works, that he is a fit person to be admitted a Fellow of the Society. Every such certificate having been read and approved of at a Meeting of the Council, shall be suspended in the office of the Society until the following Ordinary Meeting, at which the vote shall be taken.

### *Election of Fellows.*

5. In the election of Fellows, the votes shall be taken by ballot. No person shall be admitted unless at least sixteen Fellows vote, and unless he

have in his favour three-fourths of the Fellows voting.

### *Admission of Fellows.*

6. Every Fellow elect is required to take the earliest opportunity of presenting himself for admission at an Ordinary Meeting of the Society.

The manner of admission shall be thus:—

Immediately after the reading of the minutes, the Fellow elect, having first paid his subscription for the current year or his composition, shall sign the obligation contained in the Fellowship-book, to the effect following:—

“We, who have underwritten our names, do hereby undertake, each for himself, that we will endeavour to further the good of the Royal Statistical Society for improving Statistical Knowledge, and the ends for which the same has been founded; that we will be present at the Meetings of the Society as often as conveniently we can, and that we will keep and fulfil the Bye-laws and Orders of this Society: provided that whensoever any one of us shall make known, by writing under his hand, to the Secretaries for the time being, that he desires to withdraw from the Society, he shall be free thenceforward from this obligation.”

Whereon the President, taking him by the hand, shall say,—“By the authority, and in the name of the Royal Statistical Society, I do admit you a Fellow thereof.”

Upon their admission Fellows shall have the right of attaching to their names the letters F.S.S., but not in connection with any trading or business advertisement other than the publication of any book or literary notice.

### *Admission of Honorary Fellows.*

7. There shall be Two Meetings of the Society in the year, on such days as shall be hereafter fixed by the Council, at which Honorary Fellows may be elected.

No Honorary Fellow can be recommended for election but by the Council. At any Meeting of the Council any Member thereof may propose a Foreigner or

British subject of distinction residing out of the United Kingdom, delivering at the same time a written statement of the qualifications of, offices held by, and published works of, the person proposed; and ten days' notice at least shall be given to every Member of the Council, of the day on which the Council will vote by ballot on the question whether they will recommend to the Society the election of the person proposed. No such recommendation to the Society shall be adopted unless at least three-fourths of the votes are in favour thereof.

Notice of the recommendation shall be given from the chair at the Meeting of the Society next preceding that at which the vote shall be taken thereon. No person shall be elected an Honorary Fellow unless sixteen Fellows vote and three-fourths of the Fellows voting be in his favour.

The Council shall have power to elect as Honorary Fellows, the Presidents for the time being of the Statistical Societies of Dublin, Manchester, and Paris, and the President of any other Statistical Society at home or abroad.

#### *Payments by Fellows.*

8. Every Fellow of the Society shall pay a yearly subscription of Two Guineas, or may at any time compound for his future yearly payments by paying at once the sum of Twenty Guineas.\* unless the Annual Subscription or Composition Fee shall be remitted by the Council; provided that the number of Fellows whose Annual Subscription or Composition Fee shall have been thus remitted, do not exceed five at any one time.

Every person elected to the Society shall pay his first subscription (or if he desire to become a Life Fellow, his composition) within three months at the latest of the date of his election, if he be resident in the United Kingdom. If he be resident abroad, this period shall be six months. If payment be not made within the time specified above, the election shall be void.

#### *Defaulters.—Withdrawal of Fellows.*

9. All yearly payments are due in

advance on the 1st of January, and if any Fellow of the Society have not paid his subscription before the 1st of July, he shall be applied to in writing by the Secretaries, and if the same be not paid before the 1st of January of the second year, a written application shall again be made by the Secretaries, and the Fellow in arrear shall cease to receive the Society's publications, and shall not be entitled to any of the privileges of the Society until such arrears are paid; and if the subscription be not discharged before the 1st of February of the second year, the name of the Fellow thus in arrear shall be exhibited on a card suspended in the office of the Society; and if, at the next Annual General Meeting, the amount still remain unpaid, the defaulter shall, unless otherwise authorised by the Council, be announced to be no longer a Fellow of the Society, the reason for the same being at the same time assigned. No Fellow of the Society can withdraw his name from the Society's books, unless all arrears be paid; and no resignation will be deemed valid unless a written notice thereof be communicated to the Secretaries. No Fellow shall be entitled to vote at any Meeting of the Society until he shall have paid his subscription for the current year.

#### *Expulsion of Fellows.*

10. If any Fellow of the Society, or any Honorary Fellow, shall so demean himself that it would be for the dishonour of the Society that he longer continue to be a Fellow or Honorary Fellow thereof, the Council shall take the matter into consideration; and if the majority of the Members of the Council present at some Meeting (of which and of the matter in hand such Fellow or Honorary Fellow, and every Member of the Council, shall have due notice) shall decide by ballot to recommend that such Fellow or Honorary Fellow be expelled from the Society, the President shall at its next Ordinary Meeting announce to the Society the recommendation of the Council, and at the following Meeting the question shall be decided by ballot, and if at least three-fourths of the

\* Cheques should be made payable to "The Royal Statistical Society," and crossed "Messrs. Drummond and Co."

number voting are in favour of the expulsion, the President shall forthwith cancel the name in the Fellowship-book, and shall say,—

By the authority and in the name "of the Royal Statistical Society, I do declare that A. B. (naming him) is no longer a Fellow (or Honorary Fellow) thereof."

And such Fellow or Honorary Fellow shall thereupon cease to be of the Society.

#### *Trustees.*

11. The property of the Society may be vested in three Trustees, chosen by the Fellows. The Trustees are eligible to any other offices in the Society.

#### *President, Council, and Officers.*

12. The Council shall consist of a President and thirty Members, together with the Honorary Vice-Presidents.

From the Council shall be chosen four Vice-Presidents, a Treasurer, the Honorary Secretaries, and a Foreign Secretary, who may be one of the Honorary Secretaries. The former Presidents who are continuing Fellows of the Society shall be Honorary Vice-Presidents. Any five of the Council shall be a quorum.

#### *Election of President and Officers.*

13. The President, Members of Council, Treasurer, and Honorary and Foreign Secretaries shall be chosen annually by the Fellows at the Annual General Meeting.

The Vice-Presidents shall be chosen annually from the Council by the President.

The President shall not be eligible for the office more than two years in succession.

Six Fellows, at least, who were not of the Council of the previous year, shall be annually elected; and of the Members retiring three at least shall be those who have served longest continuously on the Council, unless they hold office as Treasurer or Honorary or Foreign Secretary.

#### *Nomination of President, Council, and Officers.*

14. The Council shall, previously to the Annual General Meeting, nominate, by ballot, the Fellows whom they recommend to be the next President and

Council of the Society. They shall also recommend for election a Treasurer and the Secretaries (in accordance with Rule 12). Notice shall be sent to every Fellow whose residence is known to be within the limits of the metropolitan post, at least a fortnight before the Annual General Meeting, of the names of Fellows recommended by the Council.

#### *Extraordinary Vacancies.*

15. On any extraordinary vacancy occurring of the Office of President, or other Officer of the Society, the Honorary Secretaries shall summon the Council with as little delay as possible, and a majority of the Council, thereupon meeting in their usual place, shall, by ballot, and by a majority of those present, choose a new President, or other Officer of the Society, to be so until the next Annual General Meeting.

#### *Committees.*

16. The Council shall have power to appoint Committees of Fellows and also an Executive Committee of their own body. The Committees shall report their proceedings to the Council. No report shall be communicated to the Society except by the Council.

#### *Auditors.*

17. At the first Ordinary Meeting of each year, the Fellows shall choose two Fellows, not being Members of the Council, as Auditors, who, with one of the Council, chosen by the Council, shall audit the Treasurer's accounts for the past year, and report thereon to the Society, which report shall be presented at the Ordinary Meeting in February. The Auditors shall be empowered to examine into the particulars of all expenditure of the funds of the Society, and may report their opinion upon any part of it.

#### *Meetings Ordinary and General.*

18. The Ordinary Meetings of the Society shall be held monthly, or oftener, during the Session, which shall be from the 1st of November to the 1st of July in each year, both inclusive, on such days and at such hours as the Council shall declare. The Annual General Meeting shall be held on such day in the month of June of each year as shall be appointed by the Council for the time being.



*Business of Ordinary Meetings.*

19. The business of the Ordinary Meetings shall be to elect and admit Fellows, to read and hear reports, letters, and papers on subjects interesting to the Society. Nothing relating to the bye-laws or management of the Society shall be discussed at the Ordinary Meetings, except that the Auditors' Report shall be presented at the Ordinary Meeting in February, and that the Minutes of the Annual General Meeting, and of every Special General Meeting, shall be submitted for confirmation at the next Ordinary Meeting after the day of such Annual or Special General Meeting. Strangers may be introduced to the Ordinary Meetings, by any Fellow, with the leave of the President, Vice-President, or other Fellow presiding at the Meeting.

*Business of Annual General Meeting.*

20. The business of the Annual General Meeting shall be to elect the Officers of the Society, and to discuss questions on its bye-laws and management. No Fellow or Honorary Fellow shall be proposed at the Annual General Meeting. No Fellow shall propose any alteration of the rules or bye-laws of the Society at the Annual General Meeting, unless after three weeks' notice thereof given in writing to the Council, but amendments to any motion may be brought forward without notice, so that they relate to the same subject as the motion. The Council shall give fourteen days' notice to every Fellow of all questions of which such notice shall have been given to them.

*Special General Meetings.*

21. The Council may, at any time, call a Special General Meeting of the Society when it appears to them necessary. Any twenty Fellows may require a Special General Meeting to be called, by notice in writing signed by them, delivered to one of the Secretaries, specifying the questions to be moved. The Council shall, within one week of such notice, appoint a day for such Special General Meeting, and shall give at least one week's notice of every Special General Meeting, and of the questions to be moved, to every Fellow

within the limits of the metropolitan post, whose residence is known. No business shall be brought forward at any Special General Meeting other than that specified in the notice convening the same.

*Duties of the President.*

22. The President shall preside at all Meetings of the Society, Council, and Committees which he shall attend, and in case of an equality of votes, shall have a second or casting vote. He shall sign all diplomas of admission of Honorary Fellows. He shall admit and expel Fellows and Honorary Fellows, according to the bye-laws of the Society.

*Duties of the Treasurer.*

23. The Treasurer shall receive all moneys due to, and pay all moneys owing by, the Society, and shall keep an account of his receipts and payments. No sum exceeding Ten Pounds shall be paid but by order of the Council, excepting always any lawful demand for rates or taxes. The Treasurer shall invest the moneys of the Society in such manner as the Council shall from time to time direct.

*Duties of the Honorary Secretaries.*

24. The Honorary Secretaries shall, under the control of the Council, conduct the correspondence of the Society; they or one of them shall attend all Meetings of the Society and Council, and shall duly record the Minutes of the Proceedings. They shall issue the requisite notices, and read such papers to the Society as the Council may direct.

*Powers of the Vice-Presidents.*

25. A Vice-President, whether Honorary or nominated, in the chair, shall act with the power of the President in presiding and voting at any Meeting of the Society or Council, and in admitting Fellows; but no Vice-President shall be empowered to sign diplomas of admission of Honorary Fellows, or to expel Fellows or Honorary Fellows. In the absence of the President and Vice-Presidents, any Member of Council may be called upon by the Fellows then present, to preside at an Ordinary or Council Meeting, with the same power as a Vice-President.

*Powers of the Council.*

26. The Council shall have control over the papers and funds of the Society, and may, as they shall see fit, direct the publication of papers and the expenditure of the funds, in accordance with the provisions of the Charter.

27. The Council shall be empowered at any time to frame Regulations not inconsistent with these bye-laws, which shall be and remain in force until the next Annual General Meeting, at which they shall be either affirmed or annulled; but no Council shall have power to renew Regulations which have once been disapproved at an Annual General Meeting.

28. The Council shall have the custody of the Common Seal. The Common Seal shall not be affixed to any instrument, deed, or other document, except by order of the Council and in the presence of at least two Members

of the Council and in accordance with such other regulations as the Council shall from time to time prescribe. The fact of the seal having been so affixed shall be entered on the minutes of the Council.

29. No Dividend, Gift, Division, or Bonus in money shall be made by the Society, unto or between any of the Fellows or Members, except as hereinafter provided.

30. The Council shall publish a Journal of the Transactions of the Society, and such other Statistical Publications as they may determine upon, and may from time to time pay such sums to Editors and their assistants, whether Fellows of the Society or not, as may be deemed advisable.

31. All communications to the Society are the property of the Society, unless the Council allow the right of property to be specially reserved by the Contributors.

## REGULATIONS OF THE LIBRARY.

1. The Library and the Reading Room are open daily for the use of Fellows from 10 a.m. till 5 p.m., except on Saturdays, when they are closed at 2 p.m.

2. No Fellow, other than an Officer of the Society, is entitled to use the address of the Society in any communication to the Public Press.

3. Fellows of the Society are permitted to take out books on making personal application, or by letter addressed to the Librarian, all expenses for carriage being paid by the Fellows.

4. No Fellow shall have more than ten volumes out at any one time. Fellows are not to keep any books longer than one month. Any Fellow detaining a book for more than a month shall not be permitted to take another from the Library until the book detained shall have been returned.

On the termination of the year for which the subscription has not been paid, a Fellow whose payment is in arrear shall cease to have the privilege of using the Library or of borrowing books therefrom.

5. Scientific Journals and Periodicals are not circulated until the volumes are completed and bound.

6. Cyclopædias and works of reference are not circulated, but may be lent on the written order of an Honorary Secretary for a period not exceeding *seven* days. The Assistant Secretary or Librarian is allowed at his discretion to lend works of reference for a period not exceeding *three* days, reporting at the same time to the Honorary Secretaries. If works so lent be not returned within the specified time, the borrower shall incur a fine of one shilling per day per volume for each day they are detained beyond the time specified.

7. Any Fellow who damages or loses a book, shall either replace the work, or pay a fine equivalent to its value.

8. Books taken from the shelves for reference, are *not* to be replaced, but must be laid on the Library table.

9. The Librarian shall report to the Council any infringement of these regulations, and lay upon the table at each regular Meeting (a) a List of any "Works of Reference" that may have been borrowed, and (b) a List of Books that have been out more than a month.

## DONORS TO THE LIBRARY.

DURING THE YEAR (ENDING 15TH SEPTEMBER) 1904.

## (a) Foreign Countries.

*Argentine Republic—*

General Statistical Bureau.

Ministry of Agriculture.

" Interior.

National Health Department.

*Buenos Ayres.* Provincial and

Municipal Statistical Bureaus.

Argentine Year Book, The Publishers.

*Austria and Hungary—*

Central Statistical Commission.

Ministry of Agriculture.

" Finance.

" Railways.

Statistical Department of the  
Ministry of Commerce.

Austrian Labour Department.

Bohemian Statistical Bureau.

Bosnia and Herzegovina Sta-  
tistical Bureau.

Hungarian Statistical Bureau.

Brünn Statistical Bureau.

Budapest Statistical Bureau.

Prague Statistical Bureau.

*Belgium—*

Army Medical Department.

Bureau of General Statistics.

Belgian Labour Department.

" Legation, London.

*Bruges.* The Burgomaster.*Brussels* Bureau of Hygiene.*Hasselt.* The Burgomaster.

Royal Academy of Sciences.

Institute of Sociology.

*Brazil.* The Statistical Bureau.*Bulgaria.* Statistical Bureau.*Chile—*

The Central Statistical Bureau.

The Superintendent of Customs.

*China.* Imperial Maritime Customs.*Cuba—*

Statistical Bureau.

National Library of Cuba.

*Denmark—*

State Statistical Bureau.

Copenhagen Statistical Bureau.

Political Economy Society.

*Egypt—*

The Egyptian Government.

Department of Public Health.

Director-General of Customs.

" Post Office.

Ministry of Finance.

Comité de Conservation de

Monuments de l'Art Arabe.

Public Debt Office.

*France—*

Director-General of Customs.

Director of the Mint.

French Labour Department.

Ministry of Agriculture.

" The Colonies.

" Finance.

" The Interior.

" Justice.

" Public Works.

Paris Statistical Bureau.

Economiste Français, The Editor.

Journal des Economistes, The  
Editor.

Monde Economique, The Editor.

Polybiblion, Revue Bibliogra-  
phique Universelle, The Editor.

*During the Year 1903-04—Contd.*(a) *Foreign Countries—Contd.**France—Contd.*

Réforme Sociale, The Editor.  
 Rentier, Le, The Editor.  
 Revue d'Economie Politique, The Editor.  
 Revue de Statistique, The Publisher.  
 Proportional Representation League.  
 Society of Political Economy.  
 Statistical Society of Paris.

*Germany—*

Imperial Health Bureau.  
 „ Insurance Bureau.  
 „ Judicial Bureau.  
 „ Statistical Bureau.  
 German Consul-General, London.  
 Prussian Royal Statistical Bureau.  
 Saxony Royal Statistical Bureau.  
 Berlin Statistical Bureau.  
 Frankfort Chamber of Commerce.  
 Frankfort Statistical Bureau.  
 Hamburg Statistical Bureau.  
 Allgemeines Statistisches Archiv, The Editor.  
 Archiv für Soziale-wissenschaft und Sozialpolitik, &c., The Editor.  
 Jahrbuch für Gesetzgebung, &c., The Editor.  
 Jahrbücher für Nationalökonomie und Statistik, The Editor.  
 Zeitschrift für die gesamte Staatswissenschaft, The Editor  
 Zeitschrift für Socialwissenschaft, The Editor.  
 Geographical and Statistical Society of Frankfurt.  
 Metallgesellschaft, The.  
 Verein für Versicherungs-Wissenschaft.

*Greece—*

Statistical Bureau.

*Greece—Contd*

International Finance Commission.

*Guatemala. Statistical Bureau.**Italy—*

Director-General of Statistics.  
 „ Agriculture.  
 „ Customs.  
 Ministry of Finance.  
 Economista, The Editor.  
 Giornale degli Economisti, The Editor.  
 Rivista Italiana di Sociologia, The Editor.  
 Societa Umanitaria.

*Japan—*

Consul-General, London.  
 Bureau of General Statistics.  
 Department of Finance.

*Mexico—*

Director of the Mint.  
 Statistical Bureau.

*Netherlands—*

Central Statistical Bureau.  
 Department of the Interior.  
 „ Finance.  
 „ Waterstaat, &c.  
 Director-General of Customs.

*Norway—*

Central Statistical Bureau.  
 Christiania Health Department.  
 „ Municipal Statistical Bureau.

*Paraguay—*

Director-General of Statistics.  
 Central Commercial Bureau.  
 Assumption Chamber of Commerce.

*During the Year 1903-04—Contd.*(a) *Foreign Countries—Contd.*

*Portugal.* General Statistical Bureau.

*Roumania—*

Ministry of Finance.

Statistical Bureau.

Bucharest Municipal Statistical Bureau.

*Russia—*

Central Statistical Committee.

Controller of the Empire.

Customs Statistical Bureau.

Department of Agriculture.

Ministry of Finance.

" Justice.

Moscow Municipal Statistical Bureau.

Russian Journal of Financial Statistics, The Editor.

*Finland* Statistical Bureau.

" Geographical Society.

*Salvador.* The Health Department.

*Servia—*

Statistical Bureau.

Department of Customs.

*Spain—*

Director-General of Customs.

Geographical and Statistical Institute.

Statistical Bureau of Madrid.

Geographical Soc. of Madrid.

Barcelona Municipal Statistical Bureau.

*Sweden—*

Central Statistical Bureau.

Stockholm Health Department.

Royal University of Upsala.

*Switzerland—*

Federal Assurance Bureau.

" Statistical Bureau.

" Department of Customs.

*Switzerland—Contd.*

Federal Department of Finance.

" Régie federale des Alcools."

Basel. The Statistical Bureau.

Statistical Society.

Swiss Union of Commerce and Industry.

*United States—*

Bureau of Education.

Census Bureau.

Commissioner of Labor.

Commissioner-General for Emigration.

Comptroller of the Currency.

Department of Agriculture.

" Commerce and Labour.

Department of The State.

Director of Geological Survey.

Interstate Commerce Commission.

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Political Science Quarterly, Columbia University, The Editor.

Quarterly Journal of Economics, The Editor.

Yale Review, The Editor

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Director-General of Statistics.

Finance and Commerce Depart.

*India, British—Contd.*

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Bengal, The Collector of Customs.

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 Indian Engineering, The Editor.  
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*Canada—*

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 Wood, A. J., London.

Wood, G. H., London.  
 Woodhouse, C. M. and C., London.  
 Wright, Hon. C. D., Washington.

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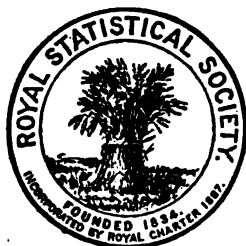
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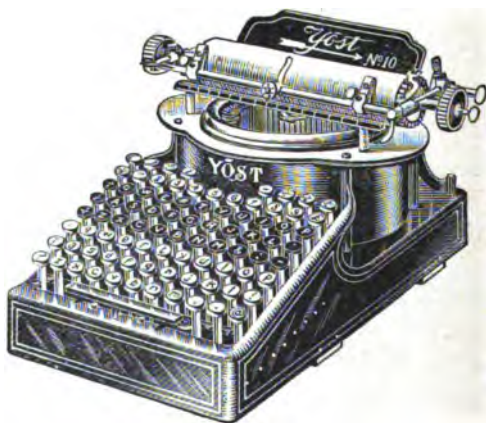
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*December, 1904.*

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NOVEMBRE, 1904.

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